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Original Articles

THE TREATMENT OF PULMONARY TUBERCULOSIS.*

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PHILADELPHIA.

It would be entirely impossible in the short space allotted to cover comprehensively the entire treatment of a disease on which volumes have been written. I shall therefore not even endeavor to mention a large number of means and measures of undoubted utility which in the hands of various practitioners have proved of unquestionable benefit; but shall confine my remarks to a single method which has successfully stood the test of trial. I shall try to point out a series of simple and practical procedures such as are available in any climate or locality, attempting at the same time to lay emphasis on certain simple details, the oversight of which has often proved the stumbling block of the general practitioner, and I shall of necessity be forced to pass perfunctorily over certain subjects, in order to be sufficiently brief.

The only treatment which has satisfactorily stood the test of time and of investigation, is that which with various modifications, is now in vogue in the various sanatoria throughout the world. The underlying basis of the treatment in all of these institutions is: first, a constant and unlimited amount of fresh air and sunlight; second, the proper quantity and quality of food, taken at the right time; third, a regulation of the expenditure of bodily energy; anabolism and katabolism being so regulated that the balance sheet shall always show a credit in favor of the former.

The successful treatment of pulmonary tuberculosis, perhaps more than any other disease, depends on a relentless attention to detail. Of the greatest importance also is an early diagnosis. This means a diagnosis of the condition at a time when no more than slight infiltration of the lungs has taken place. I would not be understood as saying that patients with cavities can not be cured, for such cure is a matter of every-day occurrence, but the length of time required for recovery corresponds more or less to the length of time the disease has run. If we wait for the appearance of tubercle bacilli in the sputum in every case before making a diagnosis, many a patient's life will be sacrificed which might have been saved if he had been given the benefit of the doubt, and if treatment had been inaugurated at an earlier moment.

* Read before the Harrisburg Academy of Medicine, 1905.

Except in hopeless cases, as soon as the diagnosis is established, the patient should be told of his condition in unequivocal terms; the general source and character of the disease should be explained, and a favorable prognosis given, provided that the proper treatment is promptly instituted and carried out for a sufficiently prolonged period. At the same time, the danger of infection, both to himself and to others, should be fully impressed on the patient, who should be warned against swallowing his own expectoration, and instructed in a method of hygienically disposing of it. He should never be allowed to leave the office with any such ambiguous phrases as "lung trouble," "weak lungs," "spot on the lung," running through his mind. This is necessary, not only in justice to the patient himself, but because it is impossible to make him carry out the treatment with the rigor, or for the length of time required for a cure, or even for an arrest of the disease, so long as he considers himself merely the victim of a protracted cold.

He must be made to understand from the very outset, that a disease which has existed for months or years can not be cured in a number of weeks, and that, in order to recover, it will be necessary for him to make it his business to get well, a duty to which all his pleasures and all but the barest necessities must be temporarily sacrificed; also that the success of the treatment will be proportional to the exactness with which he carries out the instructions of his medical adviser. He must be taught—and this is often a difficult matter at first—that the old ideas as to the baneful effects of exposure to the out-of-door air on raw, cold, damp or stormy days or nights, also bathing, etc., are fallacious; and that if properly but not too warmly clothed he may go out, and must if within doors keep the windows constantly open. As to catching "fresh cold," it should be explicitly stated that it is not the exposure to inclement weather which is to be avoided, but the association with individuals who are affected with "colds," tonsillitis, etc., as these maladies are distinctly contagious. It must also be clearly understood between the patient and the physician that the former must absolutely forswear the taking of any remedies not prescribed by the latter. Failure on the part of the patient to respond to treatment is often due to the fact that various patent medicines, cough mixtures, consumption cures, etc., which have been recommended by solicitous friends, are surreptitiously taken by the patient. These remedies usually contain large quantities of narcotics or stimulants, such as opium, cocain, alcohol and other medicaments which should rarely if ever be prescribed for a case of pulmonary tuberculosis.

Before attempting to lay out any line of treatment, the physician, by careful questioning, should make himself acquainted with every phase of the patient's daily

life and habits. Inquiries should be made as to how the waking hours are spent, the patient's surroundings, and the amount of rest during the day, or sleep at night, the state of the teeth, the digestion, the appetite; the character, quantity, quality and time of food, the use of alcohol and tobacco, especially if the patient is addicted to chewing; the character of the work done and the amount of physical effort or physical strain undergone. Attention must also be given to the mental attitude of the patient—depression calls for optimistic encouragement, and a sanguine disposition for coercing restraint, on the part of the physician. Loss of weight should be ascertained. A gain in this respect is one of the best indices as to the benefit of treatment, and patients who have lost one-third their bodily weight practically never recover.

The relinquishment of business is always a *desideratum,* although sometimes impossible. Incipient and early cases can often be satisfactorily treated while continuing their work, but the conservation of energy is a factor of prime importance which must always be borne in mind by the patient. Mill hands, factory workers, miners, bartenders and the employes of sweatshops and laundries should be required to obtain more healthful occupations. The more nearly the patient can approximate a tent-life existence the better. He should never sleep in the same room with a healthy person. My instructions to tuberculous patients are usually more or less as follows:

You are suffering from a contagious disease and unless constant care is taken in disposing of your expectoration, you are a danger to the rest of your family, to those with whom you associate, and to yourself. Every particle of your sputum must be carefully collected and destroyed. This is best accomplished by using a spit-cup containing a little water and a teaspoonful of lye; when away from home you should carry a paper bag and napkins of tissue paper into which to expectorate. Use a fresh napkin each time after spitting, carefully wipe your mouth and place the napkin in the paper bag and burn it with its contents on your arrival at home. Always hold your hand over your mouth when coughing. Never spit on the floor, street, into a spittoon, hankerchief or rag, or any place where the expectoration can not be disinfected. Be careful to avoid soiling your hands or clothes with your expectoration, and always wash your hands, lips and mouth before eating. Avoid handshaking and kissing, these customs may give your disease to others, and may bring you colds which will delay your recovery.

Never remain in a room with closed windows, especially if there is a lamp, gaslight or fire present; for the flame consumes the oxygen which you need; for this reason avoid theaters, music halls, etc. Remain out of doors as much as possible, but take no exercise, even walking without especial permission.

In order to recover you must gain weight, to do this you must save your strength and energy as much as possible, and must eat only the most nourishing and easily digestible food. Never do anything to the extent of tiring yourself out, but stop and rest before this point is reached. Your diet should consist mainly of milk, cream, eggs, fresh meat, butter, bacon, stale bread or toast, potatoes—well baked or boiled, or boiled rice.

If possible, rest in a recumbent position for half an hour before and after meals. All food must be eaten slowly, and thoroughly chewed. Retire early and secure at least nine hours sleep.

The rays of the sun are directly curative in their action; except in the very hottest days, expose yourself to them as much as possible. Exposure of the entire body to the sun if possible in your room is eminently desirable. It is a good plan each morning to bathe the neck and chest with cold water, following this up with a brisk rub with a coarse towel.

Medicines may help you, but they alone can not cure you. Your recovery depends largely on the exactness with which you carry out my instructions.

THE PATIENT'S ROOM.

The patient's room should be well ventilated, and should preferably have a southern exposure, if possible with a porch attached, on which the greater part of the day, and often the night, can be spent. In the absence of the latter structure, however, a flat roof, a fire escape or the back yard and a steamer chair can easily be made to compensate for the deficiency. The room should be uncarpeted and all draperies, curtains and useless ornaments should be removed therefrom. All the foregoing and other innovations at first sight, of course, will seem ridiculous to the patient, but the vast majority, as well as their friends, will usually accede to requirements with alacrity if their necessity be explained by the physician.

DIET.

It should not be forgotten that the tuberculous patient requires more food than the normal individual. It is a good plan to bear in mind in a general way the relative caloric value of foods. A tumbler of good milk contains as much nutritive material as two eggs, three ounces of lean meat, sixteen ounces of oysters, one ounce of cocoa or cheese, or two ounces of bread. Digestibility and ease of absorption must not be overlooked. All food should be well cooked with a liberal admixture of fats, especially butter. Hydrocarbons are much more easily and perfectly absorbed and digested if well mixed with carbohydrates.

As has already been stated, the patient should never eat a heavy meal when mentally worried or physically exhausted; for this reason rest before and after meals should always be insisted on when possible. The entire day should be mapped out for the patient in detail. It is usually best to have him take only one heavy meal a day, this preferably at noon. In prescribing a diet for the tuberculous patient, the principle object to be borne in mind is that the food should contain a high nutritive quality in the most easily digestible form. For this reason, milk stands easily at the head of the list. The midday meal should consist of fresh meat, milk, baked potatoes, boiled rice, very soft boiled or poached eggs, bacon and some light dessert such as junket, sago, tapioca or baked apples. The partaking of milk, cream and butter should be facilitated and encouraged. Sweets, pastry, fried foods, cabbage, and similar indigestible articles are forbidden. Cocoa and weak tea or coffee are permissible, but must not be allowed to supplant the drinking of milk. The last named article of diet may be taken either hot or cold, but should not be boiled. The nourishment during the rest of the day is to be supplied by a glass of milk with an egg beaten up in it, sipped slowly, with the addition of toast or a cracker, at three hourly intervals during the waking period. A little nutmeg, cinnamon or a pinch of salt may be added if desirable, or the eggs may be taken separately. The addition of salt and lemon juice often makes the taking of a raw egg much less difficult. In this way, three or four quarts of milk and from four to a dozen eggs can be taken by the patient without much trouble. The constipation which the change to a milk diet might seem likely to cause is overcome by the increased amount of fluid and fat ingested.

I would not, however, be understood as recommend-

ing the indiscriminate stuffing of patients with nutriment. Each case must be regarded on its own merits and individually treated. If there exists a weakness of the heart, a dilated stomach, marked tendency to gastrointestinal fermentation, motor insufficiency, etc., large quantities of fluid may be harmful.

Alcohol in any form is better omitted, and the use of tobacco should be minimized, especially if there is pharyngeal, laryngeal or bronchial irritability. The taking of milk and eggs should be insisted on, even when the appetite is lacking. The digestive capacity of the tuberculous patient is usually much better than the subjective appearances of it; especially if the condition of the emunctories is kept up to par. Very soft boiled or poached eggs may be allowed if the raw eggs remain insuperably objective.

The stimulating effect of the outdoor air, and the regular taking of milk and eggs is usually attended by the ability to take more, "as if increase of appetite had grown by what it fed on."

The value of the appetite itself, however, must not be overlooked or underrated. Pawlow's experiments have proved beyond cavil the value of the "psychic juice." With this end in view, no pains should be spared to make the meals of the patient as dainty and attractive as possible. Food remnants, half emptied tumblers, soiled napkins, etc., should never be allowed to stand around within the sight of the patient, and for the same reason, when possible, the odor of the kitchen should be rigorously excluded from the patient's room.

PSYCHICAL TREATMENT.

Next in importance to hygiene and diet is what may be termed the psychical treatment. Tuberculous subjects are almost without exception largely susceptible to suggestion. It requires more than a knowledge of the disease and a familiarity with therapeutic procedures successfully to treat these cases, and the sooner a bond of sympathy, confidence and control is established between patient and physician the better. An example of this susceptibility to suggestion is shown by the way in which night sweats cease if a pan of water is placed under the bad, and the hypnotic effect of certain placebos, etc.

The physician must study the mental state of the patient in order to be able to exercise the proper influence over him. "Frivolity must be met with sternness, ignorance by benevolent instruction, and foolish conduct by firmness and constancy" (Cornet). The mental attitude of the physician must always be one of firmness and optimism, at least in so far as the patient is able to judge of it. The protracted course of the disease taxes the endurance of the most strong-willed patient, and it requires the employment of all of his best efforts, combined with the sustaining guidance of his medical adviser, to overcome the hardships, trials, temptations and discouragements which bestrew the path to recovery.

CLIMATE.

Volumes have been written on this subject of climate, recommending various altitudes with varying degrees of temperature, humidity, sunlight, wind, etc., but practical experience has taught us that, while certain regions may confer benefits, tuberculous individuals can recover in almost any climate if the proper treatment is instituted early, and if the necessary hygienic and dietetic principles are carried out. The good results of sanatorium treatment are due less to the climatic causes, and more to the careful and constant supervision the minor details of which go to make up the daily régimen than is generally supposed. A patient with limited means would far better remain in a crowded city if he can command home care and comforts and a proper dietary than move to some health resort where, owing to his lack of funds, these items will be grudgingly and inadequately supplied.

GASTROINTESTINAL SYMPTOMS.

The treatment of the gastrointestinal tract is the most legitimate form of phthisiotherapy. The importance of intestinal fermentation, flatulence, etc., on cough will be considered later. Fermentation and flatulence should be treated with hydrochloric acid and strychnin, before meals, or with a mixture of creosote and sodium bicarbonate an hour or two after meals. Due attention, of course, must be given to the diet, the more indigestible forms of carbohydrates being excluded.

Diarrhea due to decomposition of food products or to intestinal congestion or ulceration yields most promptly to a carefully regulated diet and the administration of castor oil, to which, if the case be a severe one, a few drops of the deodorized tincture of opium may be added. Excellent results are often achieved by the administration of magnesium sulphate in doses of ten or fifteen grains at half hourly intervals. If the intestines are kept free from the irritating secretions by two or three good bowel movements daily, astonishing improvement often occurs. The addition of lime water or barley water to the milk, which should be warmed before taking, is also useful. Bismuth, to accomplish any results, must be given in large doses, to which salol or guaiacol carbonate may be added.

Constipation calls for an increased amount of fruit and green vegetables to the diet. A raw apple eaten before retiring is often quite miraculous in its results. The amount of fluid in the dietary should be increased, and, if possible, also the amount of fat ingested. A glass of water taken on rising, to which a little sodium phosphate or magnesium sulphate may be added, and massage of the abdomen practiced by the patient himself before getting out of bed, are all useful measures. If vegetable laxatives such as aloin cascara, belladonna, podophyllin, etc., are resorted to, they should be used with caution. If intestinal ulceration, which is often present when unsuspected, exists, these remedies almost invariably do harm and set the patient back many weeks on his road to recovery, by irritating ulcerations and increasing the amount of secretion. The administration of laxatives is frequently necessary in pulmonary tuberculosis, and constipation should be most carefully guarded against.

Few drugs if any are needed in the treatment of pulmonary tuberculosis.

Many forms of medication are distinctly injurious in their action as a general rule; among these may be mentioned, mercury, potassium iodid and antimony. A large number of drugs from which *a priori* we might expect benefit, are disappointing; among these are digitalis, strophanthus, caffein, spartein, etc. Among those which will perhaps be found the most useful the following may be mentioned: Strychnin, nitroglycerin, camphor, iodin, iron, arsenic, calomel, magnesium sulphate, sodium phosphate, creosote.

The primary factor ever to be borne in mind is that

no drug should ever be prescribed without a definite indication or object in view. Nothing can be more ridiculous and harmful than this sort of ratiocination. "This man has pulmonary tuberculosis, therefore I will give him cod-liver oil;" or "he looks pale, therefore we will administer iron." In the first instance, we are simply supplying a fat which is no more nutritious, but much more indigestible than butter, and in the latter we upset the digestion of a patient who may have a normal number of red blood corpuscles and normal amount of hemoglobin for no purpose. Recovery in tuberculosis of the lungs depends largely on the ability of the patient's stomach to digest more than a normal amount of food and his heart to do an abnormal amount of work, therefore, no drug should ever be given which entails the risk of disarranging the digestion or depressing the circulation, without the most urgent necessity. No known drug has any directly curative influence on the tuberculous process *per se*.

From what has been said, it is perfectly obvious that the medicinal treatment of this disease should consist largely in remedies calculated to further the digestive processes. With this object in view, it is primarily necessary to keep the action of the liver, gastrointestinal tract and kidneys in a satisfactory state of functionation. As an aid to digestion, I have seen marked benefit follow the administration, either before or after meals of HCl, strychnin and some bitter tonic despite the statements of recent gastrologists that the small amount of HCl thus administered can not appreciably aid in digestion, directly. Good results have also followed the use of sodium bicarbonate and nitrohydrochloric acid.

As to the benefits conferred by pepsin, pancreatin, caroid, taka-diastase and similar preparations, I must confess myself a skeptic. I have never been able to convince myself that any distinct improvement attended their administration. To give a medicine merely for the sake of appearing to do something is most reprehensible, and unless the proper kind and quantity of food be taken and the other hygienic details carried out, all the tonics in the world will accomplish nothing.

SYMPTOMATIC TREATMENT.

Cough is the symptom of which the patient most frequently complains, and it is in the treatment of this symptom that the most serious mistakes are usually made. A certain amount of cough is usually necessary to keep the respiratory passages free; in this respect it is beneficial and should not be checked. Excessive cough either without or with but slight quantities of sputum should never be treated by the administration of opium or any of its drivatives. It should be made an almost invariable rule, that no opium should be given to tuberculous patients unless all hope of recovery is despaired of. Cough is a symptom which is largely within the subjective control of the patient, who should be taught to overcome the desire by his volition; and not to abet it. If the first impulse to cough is withstood, the desire and necessity will often pass away. A paroxysm of cough can often be aborted by taking eight or ten long slow, deep inspirations followed by forcible expirations. If this method fails, the patient should be told to guard himself against dusty or smoky atmosphere, the odor of tobacco, etc. The cough-eliciting effect of cold, raw, dry or windy air can be avoided by holding a cloth before the mouth, or by artificially moistening the atmosphere of the room. Of the greatest importance too, is attention to the state of the gastrointestinal tract. Cough is often the result of pneumogastric irritation caused by indigestion, constipation, etc., and attention to these matters will often relieve a cough which has resisted all other treatment.

If the expectoration is very tenacious, the period of morning cough may be materially shortened and eased by drinking a glass of hot water, containing a little sodium bicarbonate or some other alkali. The administration of the usual cough mixtures, syrups and the like should never for a moment be considered as a routine treatment. If an attack of acute bronchitis supervenes, a mixture somewhat similar to the following may prove beneficial.

℞.	Ammonii chloridi	gr. vi	3
	Spts. ammoni aromatici	m. xv	1
	Spts. glonoini	m. i	06
	Tr. nucis vomicæ	m. x	6
	Elixir calisayæ ad q. s	ʒi	4

Under careful hygienic and dietetic treatment, excessive cough, which only means excessive irritability, usually disappears.

When cough is due to venous engorgement of the lungs, as is manifested by an accentuation of the pulmonic second sound, nitroglycerin is indicated. Strychnin should be administered with caution in cases with irritable cough. In cases of mixed infection, with large amounts of expectoration, creosote is sometimes of undoubted benefit if administered in gradually increasing doses. It should never be employed as a routine method, on account of the danger of interfering with the digestion; and it is hardly ever necessary in incipient cases.

Many cases of cough arise reflexly through inflammation of the pharynx, larynx, trachea or costal pleura. When the latter condition exists, strapping of the chest may be very beneficial; if the former, appropriate local treatment should be instituted.

FEVER.

Pyrexia is best treated by rest in bed, but patients with slight degrees of fever—99 to 100—may be allowed to go about, with proper restrictions; even these will do better, however, if they are only allowed to be up during a part of the day. As has already been stated, neither fever nor any other symptom should ever be considered a bar to the fresh air treatment. Hyperpyrexia may be reduced by cold sponging, but under no conditions should any of the coal tar products—or other depressant remedies be administered, as they weaken the patient and, by producing vasomotor relaxation, favor the occurrence of night sweats. If the digestive organs are in a normal condition, no restriction need be made in the diet on account of the pyrexia. If anorexia exists, the digestive organs require treatment.

NIGHT SWEATS.

The treatment of this condition is, strange to say, frequently a bugbear to the physician. In the wards of the Phipps Institute, where practically all the patients are in a hopelessly advanced stage of the disease, this symptom is almost unknown. No medical treatment whatever is employed in its relief. The constant supply of fresh air, and the regulation of the digestive functions completely eradicate the appearance of night sweats even in patients who, previous to their admission had been used to a drenching sweat every night. In cases of unusual severity, the patients are sponged with cold water and alcohol, once or twice

in the course of 24 hours, which helps to restore vasomotor tonicity.

HEMOPTYSIS.

Hemoptysis calls for rest in bed, for at least ten days. An ice bag should be placed on the chest, nitroglycerin gr. 1/100 administered every three hours, laxatives prescribed, and the patient warned against exertion, excitement, and all loud talking or unnecessary coughing. Anxiety on the part of the patient should be allayed by a hypodermic injection of morphin, and the assurance that hemorrhages are rarely fatal, and that a few days' rest and good feeding will easily compensate for the amount of blood lost.

PAIN.

Pain due to pleuritis may be relieved by strapping the chest, tincture of iodin, blisters, dry cupping, or application of an ice bag, or a mustard plaster. The vague aches and pains which are so frequent, and which have been called tuberculous rheumatism should be treated by attention to the emunctories, the local application of heat, warm baths, and massage. For the latter purpose, almost any of the official liniments may be employed. A preparation which has been found very efficacious is as follows:

R.	Iodi cryst	gr. xxx	2
	Lanolini	ʒiss	45
	Olei gossypii ad	ʒiii	90
	Etheris q. s.		

Internally administered, sodium salicylate is sometimes of benefit.

INSOMNIA.

As has already been intimated, much can be accomplished in the treatment of this symptom by suggestion. A heavy meal in the evening should be avoided. A glass of hot milk or cocoa, or a mustard foot bath may be taken just before retiring. If the insomnia is due to cough, the patient should be instructed to suppress the latter as much as possible. Hyperirritability of the pharynx or larynx should be treated. If insomnia is due to tachycardia, an ice bag to the precordium will be found useful.*

Under the beneficent influence of fresh air this symptom can usually be overcome without great trouble. Only after all other measures have failed should recourse be had to sedatives or hypnotics, and as can not be too forcibly insisted on, no form of opium should be administered as long as a chance of recovery is entertained.

One of the most fruitful sources of insomnia during the winter months is coldness of the extremities. This may be overcome by hot foot baths, or by placing hot bricks in the bed. The patient in such cases should sleep in woolen stockings, and it is not a bad plan to have woolen pajamas worn, which have stockings attached.

HEART WEAKNESS.

Cardiac weakness as manifested by tachycardia, palpitation on exertion, a sense of weakness, edema or vertigo, should be treated by absolute rest in bed, the avoidance of mental excitement, or worry, and application of an ice bag to the precordium. Heart weakness is a serious sign, which should receive prompt and careful treatment. Patients who present persistent and intractable rapidity of the pulse are apt to do badly even though the amount of lung tissue involved may be slight. As internal remedies, digitalis and strophanthus are signal failures, and reliance will usually have to be placed on glonoin, camphor, and strychnin.

I have made no mention of specific treatment by means of the various serums and culture products which are now in use, because, while these methods may be, and probably are, of benefit in the treatment of tuberculosis, they must still be considered in the nature of adjuncts, and not of essentials.

There is nothing original or new in the methods which I have advocated. The whole matter is so simple that it seems hardly worth while calling attention to it, but the entire success of the treatment is proportional and dependent on the exact and careful manner in which apparently insignificant details are investigated and carried out. The main reasons why such an air of incredulous skepticism and prognostic gloom pervades the subject of pulmonary tuberculosis in the mind of the average practitioner are two: First, the disease is not recognized in its incipient stage; second, owing to lack of conviction, on the part of the physician, and to insufficient understanding and impression on the part of the patient, the simple details of the essentials—fresh air, diet, and hygiene—are not properly carried out.

A tuberculous patient who has lost weight, when put under the proper treatment, should promptly and steadily respond. This response will be manifested by a gain in weight, gradual subsidence of the fever, cough, expectoration, malaise, and in time, by the disappearance of the tubercle bacilli from the sputum, unless the case be too far advanced. If distinct improvement does not occur something is wrong—there is a mistake somewhere, and it is the duty of the physician, by careful questioning, by relentless examination, and by exhaustive collateral investigation among the patient's family or friends, to ascertain the cause.

It will usually be found that the patient in some respect or another is not carrying out his treatment. He is exhausting his strength by exercise or overwork, by not taking his food as prescribed, the windows of his room are only down half an inch at the top, instead of all the way, he is surreptitiously taking alcohol or some patent nostrum recommended by a friend, or he is in some respect deceiving himself and his physician, and infringing the rules laid down by the latter, and until these irregularities are discovered and corrected no satisfactory progress will be made.

*For a more comprehensive consideration of tachycardia in pulmonary tuberculosis the reader is referred to an article by the author in the Zeitschrift für Tuberculose und Heilstaettenwesen, 1905.

CASE OF EXOPHTHALMIC GOITER WITH UNUSUAL ASSOCIATED LESIONS.

DISCUSSION OF THE CLINICAL PROBLEM SUGGESTED THEREBY.*

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CHICAGO.

Patient.—W. M., aged 54, American of Scotch parentage; occupation, foreman of public works. Family history negative.

History.—Patient is over six feet in height, is of unusual intelligence and displays evidence of having possessed great muscular development when in his prime. He declares that his use of alcohol and tobacco has always been extremely moderate and there is no history of venereal infection. He con-

*Read before the Chicago Medical Society, 1905.

fesses that he has always been a very nervous man and that, despite his efforts at control, his temper has been a quick and unruly one. Mumps, measles and "grippe" are the only illnesses in his personal history, with the exception of an ephemeral attack occurring a year ago designated by his medical attendant "muscular rheumatism."

Present Illness.—Five years ago the patient first observed a swelling of the neck, which has persisted in the form of a moderate sized goiter ever since that time. Close questioning elicits the general statement that he was very nervous, had considerable palpitation and began gradually to lose weight about the time of the appearance of the goiter. Shortly afterward he observed transient swelling of the hands and feet on exposure to cold. He states that about the same period he noticed that the urine became increased in quantity and he began to experience the necessity of rising each night to void urine, a practice which has continued ever since. He denies that there existed at that time or subsequently any undue prominence of the eyeballs. About one year ago he suffered a severe attack of urticaria, ascribed at the time to food poisoning. The patient was first seen by me in August, 1903. The emaciation, which has been gradual and continuous since the development of the goiter, has reduced the body weight from 200 pounds to 160 pounds. For some months he has noticed that the appetite is unnaturally voracious and that he suffers considerably from thirst, the urine being correspondingly copious. There have been no boils or skin eruptions other than the urticaria already referred to. The following clinical notes were taken at this time.

There is noticeable a high degree of general nervousness and the patient is easily excited. The skin is dusky, although not pigmented, and is constantly covered with an oily warm perspiration. There is present fine tremor of the hands when the arms are extended. The face is covered with a fine network of dilated capillaries, most pronounced at the nasal alæ and over the malar prominences, which gives to the face a dusky bronzed look. The anterior temporal arteries are dilated and tortuous and can be seen to pulsate strongly. A decided bagging under the eyes is noticeable, and the conjunctivæ are injected. The pupils are regular in size and react normally to light and accommodation, and both hearing and sight are good, except for the usual presbyopia to be expected at his age. A moderate sized right goiter exists, as already stated. The pulse is rapid, counting 126 at the wrist, irregular both in rhythm and volume, the pulse wave being abrupt and large, but not sustained. The vessels are markedly sclerosed, but do not give to the examining finger the impression of tension. There is excessive pulsation of the prominent systemic arteries, particularly the carotids and brachials. On flexure of the forearm the brachial artery is thrown into vermicular folds and is seen to pulsate strongly with a lateral movement of the vessel. The patient is dyspneic and states that for some time he has experienced "short breath" on exertion and nervous strain. At such times he feels a sense of poststernal weight and oppression, but has never had any pains in the chest. There is marked pretibial pitting, the edema not extending above the knees, and there is no ascites. At this time the patient has no idea of his physical condition, except a vague impression that something is the matter with his heart.

Physical Examination.—Patient shows some evidence of emaciation. The skin is oily, moist with perspiration, and there is a small papular eruption on the chest and back, while many moles exist.

Heart: On inspection an excessive diffuse precordial heave is observed; viewed in profile, the left anterior chest curve is more prominent than the right. The apex can be readily seen in the fifth interspace and displaced fully one inch to the left of the nipple line. Excessive carotid pulsation and suprasternal and epigastric pulsation exist. On palpation a soft presystolic thrill running up to the apex can be felt. The area of superficial cardiac dullness measures 16.5 centimeters at the level of the fourth rib, 10 centimeters to the left and 6.5 centimeters to the right of the midsternum. In the fifth interspace the left border reaches 13 centimeters to the left of the median line. A blowing systolic murmur is audible in the mitral area, with its point of greatest intensity at the apex. This murmur almost entirely substitutes the first sound of the heart at the apex and is transmitted toward the axilla, but is not audible under the scapula behind. A second murmur, harsher in quality and presystolic in time, is audible over a comparatively limited area to the right of and above the apex. The second pulmonic sound is markedly accentuated, as is also the second aortic, although to a less extent.

Abdomen: Abdominal examination is negative, except that the liver is enlarged two finger breadths and somewhat tender to pressure over the left lobe.

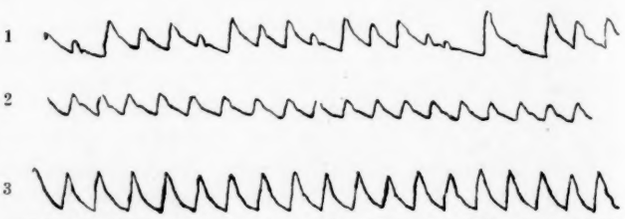
Blood vessels: The systemic arteries are sclerosed and the pulse wave is excessive all over the arterial tree. The pulse is very irregular both in rhythm and quality. Many cardiac systoles are abortive, some not being perceptible at the wrist. The sphygmogram displays little of the wave of tension that might with reason be expected in view of the arteriosclerosis and the following urinary findings. Blood pressure equals 130 mm. of mercury (Riva Rocca, 9 cm.)

Urine: Urine analysis reveals 3 per cent. of sugar, 8 per cent. bulk of albumin precipitate estimated by centrifuge, 1 per cent. urea, and under the microscope many casts and renal epithelia. The casts are mainly broad hyaline, with some granular and a few waxy casts. Acetone and diacetic acid absent.

No anemia is present. The patellar reflexes are markedly accentuated.

Eyes: A careful examination of the eyes made a short time after first consultation, with the expert assistance of Dr George F. Suker, yielded the following results:

There is no constriction in the field of vision of either eye. There is no visible protrusion of the eyeball and the exophthalmic symptoms of von Graefe, Stellwag and Moebius are absent. Ophthalmoscopic examination reveals the presence of typical hemorrhagic retinitis in both fundi. Multiple pin-



Pulse tracings taken Sept. 4, 1903, Feb. 15, 1904, and March 4, 1904, respectively.

point hemorrhages are found distributed over the retinæ of both eyes, particularly to the nasal side of discs, some being quite peripheral. A large flame-shaped hemorrhage exists in the upper temporal quadrant of retina between the disc and macula in the right eye. The retinæ and choroids of both eyes, as a whole, look somewhat suffused, but otherwise no degenerative changes are present. Discs are clearly outlined and apparently normal. The retinal vessels, especially the veins, are tortuous and a marked venous pulsation is noticeable. The peripheral light striæ on the arteries are prominent and enlarged, due to the arteriosclerosis. Repeated fundus examinations have been made in the intervening months since the above findings were recorded, and we have been able to follow closely the progress of degenerative changes which are typically those of albuminuric retinitis. On March 8, 1904, the date of last recorded ophthalmoscopic examination, many well-formed areas of degeneration could be seen. The larger areas were confined to the circum-macular region, the smaller ones to the periphery of the retinæ. There were several fresh hemorrhages in each retina. Vision is not altered and there is no change in the visual fields.

Influence of Treatment.—Treatment consisted of general hygiene, dietetic procedure and the routine administration of digitalis.

(*a*) Influence of diet on the glycosuria: The patient was at first placed on a diet of meat, fats, green vegetables, acid fruits, 100 grams of plain white bread and 50 grams of potato to be taken at the midday meal, the bread to be equally divided between the three daily meals. At the expiration of the first week of treatment, the glycosuria had become reduced from

3 per cent. to 2 per cent. Two weeks later (Sept. 21, 1903), without further restriction of carbohydrate foods, the glycosuria had subsided to 0.4 per cent. October 22 the glycosuria amounted to 0.6 per cent. The allowance of starch was now increased in the interests of the patient's general nutrition, the daily ration of bread being raised to 200 grams. The increase of carbohydrate was attended by a marked rise in the glycosuria, the urine showing on October 20 a sugar content of 1.7 per cent. and on November 20 the same amount. The patient's condition in other respects being now much improved, he was directed to gradually return to the former dietary. The subsequent course of the glycosuria was as follows:

December 3, 1903, glycosuria .....1.3 per cent.
December 21, 1903, glycosuria .....1.0 per cent.
March 5, 1904, glycosuria .....1.0 per cent.
March 23, 1904, glycosuria .....0.8 per cent.
May 2, 1904, glycosuria .....0.7 per cent.

With control of the glycosuria, the diabetic symptoms (polyuria, polyphagia, polydipsia, etc.) have gradually disappeared.

(*b*) Influence of digitalis on the heart and albuminuria: Tincture of digitalis was ordered in 15-drop doses every eight hours. One week after the institution of this medication the patient's cardiac condition remained practically unchanged, the albuminuria having undergone no diminution (8 per cent.) Two weeks later (Sept. 21, 1903) patient was still dyspneic and edematous, the pulse irregular, and the albuminuria had increased to 15 per cent. bulk of moist coagulum. An additional dose of digitalis was now ordered, the total dosage being 60 minims of the tincture in the twenty-four hours.

Result.—Steady improvement now set in, and by October 22 cardiac regularity had become almost completely restored. Edema was greatly lessened, the albuminuria subsiding to 2 5 per cent., casts persisting and urea 0.7 per cent. Since that date the progress of the case has been marked by steady improvement. Digitalis administration was continued, although in reduced amount, the routine dosage being 15 minims twice daily. The patient's general strength has been greatly benefited, although no gain in body weight is recorded; dyspnea has disappeared except on sharp exertion, and but slight evening malleolar edema can be detected. Albuminuria persists at 2 per cent. bulk, not having been at any time reduced below that point.

Analysis: May 2, 1904: Total quantity, 1,000 c.c.; albumin, 2 per cent.; urea, 23 grams; sugar, 0.7 per cent. (total, 7 grams); casts and renal cells.

An interesting feature of the case is that despite the restoration of compensation and the disappearance of cardiac irregularity, digitalis medication failed to reduce the pulse rate. The pulse has persistently ranged from 100 to 120 a minute although greatly improved in tone and rhythm. Notwithstanding the great improvement in ventricular adequacy, the sphygmograph and examining finger fail to detect any distinct element of tension in the pulse. Meanwhile the vasomotor phenomena (fine tremor, excessive pulsation, sweating) have continued unchanged, and recently increasing irritability of temper, failure of memory and power of concentration point to developing psychosis.

Under very moderate dietetic control the glycosuria remains at a minimum and polyuria, polyphagia and polydipsia have disappeared. This amenability to treatment indicates a diabetic glycosuria of extremely mild type, probably corelated to the thyroid toxemia.

The persistence of albuminuria after the therapeutic test of continuous digitalis administration until cardiac adequacy was restored, marks it as being independent of circulatory failure in its origin—in fact, a true renal albuminuria. This deduction is proved correct by the low urea excretion, the presence of degenerative tube casts and finally by the incontrovertible evidence of albuminuric retinitis typically developed in both eyes.

That exophthalmic goiter exists I think there can be no question. With the exception of the ocular signs, the symptom complex is complete, including goiter, tachycardia, fine tremor, emaciation, excessive sweating and vasomotor paresis.

The cardiac lesion is a double mitral one, an associated regurgitation and stenosis. The element of stenosis marks it as probably being of endocarditic origin and not primarily produced by the Bright's disease or by the exophthalmic goiter.

We have, then, clearly established in this patient the unique association of the following lesions: Exophthalmic goiter, diabetes, Bright's disease, mitral disease and retinitis.

The chief interest of the foregoing case is in the clinical values which it includes. These comprise the problems of the association of glycosuria and exophthalmic goiter, the influence of the latter and of Bright's disease in causing valvular defects and the differentiation of secondary cardiac lesions so caused from those of antecedent but obscure endocarditic origin. There is involved as well the question of the association of glycosuria and nephritis and finally the interpretation of retinitis occurring in cases presenting both glycosuria and albuminuria. These are without exception vital problems in clinical medicine and their bearing on the present case constitutes my warrant for reporting this incomplete clinical history.

Glycosuria as a secondary or symptomatic manifestation is of frequent occurrence during the progress of a variety of pathologic states. It is met in many functional and organic nervous diseases, in many infectious diseases and systemic toxemias, and after the administration of various drugs. The exact manner in which carbohydrate metabolism is affected in so wide a range of clinical conditions is not definitely known. Accumulating evidence points with strong probability to the assumption that any nutritive perversion of toxic or infective origin is capable of so influencing carbohydrate assimilation by its effects on cellular vitality as to produce glycosuria. Exophthalmic goiter has long been recognized as exerting a particularly disturbing influence over the metabolism of the carbohydrates. It has been found that glycosuria of a purely functional type (*glycosuria e saccharo*) can be produced by the alimentary test in exophthalmic goiter in a much higher percentage of cases than in health (Chvostek, Kraus and Ludwig, Strauss). It is a question, however, whether the proportion of cases so affected is much greater in this disease than in many nervous affections and diseases characterized by toxemia. Stern claims that *glycosuria e saccharo* is no more frequent in exophthalmic goiter than in some other conditions, notably gastric hyperacidity, in which he was able to demonstrate the reaction in 12 per cent. of 42 consecutive cases. It would appear that we are not warranted in drawing any conclusion from the presence of a lowered carbohydrate tolerance in exophthalmic goiter beyond the general existence of disturbed assimilation.

It is demonstrated by a considerable array of recorded clinical observation that this disease and true diabetes mellitus are not infrequently concurrently present in the same individual. A few instances are on record in which diabetes existed before the advent of exophthalmic goiter. A greater number of cases is recorded in which either the two diseases developed synchronously or exophthalmic goiter antedated the diabetes. The underlying factor in this association still awaits demonstration. The most sugges-

tive feature of the corelation of the two states is that the administration of thyroid preparations will frequently produce glycosuria and when that symptom already exists will often render it more intense. Glycosuria not only results in subjects who are already the victims of thyroidism, but in apparently healthy individuals. This phenomenon can not be dismissed with the assumption of Strauss that thyroid preparations produce glycosuria only in subjects that are predisposed to it. Bettmann was able to produce glycosuria by a week's thyroid medication in 12 out of 25 normal healthy people. It is not reasonable to suppose that so large a proportion of healthy individuals (48 per cent.) is predisposed to glycosuria. This power of thyroid preparations to cause glycosuria may be regarded as similar to the effect of suprarenal extracts which are capable of inducing glycosuria. It speaks in favor of a grave influence over carbohydrate metabolism and leaves us to perforce accept the conclusion that the perverted thyroid activity of exophthalmic goiter disease is at least a factor in producing the associated glycosuria. In other pathologic states associated with hyperactivity of the thyroid, viz., chlorosis, acromegaly and pregnancy, glycosuria is frequently noted as a development.

I think it improbable that the thyroid is directly concerned in carbohydrate assimilation. The most reasonable explanation of the glycosuria of this disease is that it is a toxic glycosuria, the toxin consisting of the thyroid or parathyroid secretion, which results from the abnormal gland activity. The appearance of glycosuria in exophthalmic goiter or its increase when already present may be taken as evidence of increasing thyroid toxemia and, consequently, may prove an indication of prognostic value. The instance constituted by the foregoing reported case appears to be a mild diabetic glycosuria developing during the course of exophthalmic goiter. The exact relation in time to the primary disease can not be determined owing to lack of data, but it is clear that the thyroidism antedated the glycosuria by a considerable interval.

The effects of exophthalmic goiter on the heart are marked and constant although not characteristic in type. A certain amount of cardiac enlargement almost constantly exists and in many cases murmurs are to be heard over the heart. Russel Reynolds found cardiac murmurs in two-thirds of his cases, Mannheim in 5 out of 41 cases, Murray in 41 out of 120 cases. When a systolic murmur develops it is frequently audible over the whole heart, with greatest intensity near the sternum or at the base of the heart. Such a murmur may be hemic in origin if anemia is present, although anemia is not a necessary concomitant of this disease. It may at times be heard distinctly at the apex and sometimes to the left of the apex, having all the characteristics of a mitral murmur. There is a probability, then, that actual mitral insufficiency has developed, the result of dilatation of the left ventricle, the mitral valve orifice sharing in the dilatation. It is proved by clinical experience not only that mitral regurgitation may be produced in this manner by the heart strain and denutrition of exophthalmic goiter, but also that the cardiac phenomena may closely simulate those of organic defects produced by endocarditis. If evidence of valve lesion is found in this disease, the cardiac disturbance is not to be regarded as necessarily dependent on the exophthalmic goiter. The question of structural heart disease co-existing with the thyroidism is to be considered and this will chiefly be determined by the nature of the consecutive changes in the heart chambers and the antecedent history. In some cases, cardiac lesions have undoubtedly preceded the disease and in a few instances rheumatic antecedents may be elicited, in which case the murmur may reasonably be attributed to rheumatic endocarditis. Unless the question of antecedent endocarditis can fairly be raised, the murmur may be interpreted as due to relative mitral insufficiency from ventricular dilatation. The cardiac enlargement and murmur of exophthalmic goiter are not so permanent and do not produce such grave consequences on the heart and circulation as are wrought by the valvular defects of endocarditis. The evidence of cardiac impairment is often found to improve *pari passu* with the disease, and it may perhaps disappear as the systemic state improves. Slight mitral endocarditis has occasionally been found after death in this disease, probably due to mechanical strain of the valve. The experiments of Roy and Adami demonstrate that, as a result of overstrain, ecchymosis and roughening of the valve may be produced, resulting in incompetence.

The frequency of secondary heart lesions in chronic Bright's disease is too well known to require elaboration. A systolic murmur at the apex is extremely common in cases in which arterial tension is greatly increased. Indeed, sooner or later in most cases of chronic Bright's disease and especially during the terminal stage, a murmur in the mitral area and ventricular enlargement may be made out. The walls of the ventricle have yielded under prolonged strain and the curtains of the mitral valve become drawn one from the other to such a degree that they are imperfectly opposed during systole and regurgitation ensues. In such case there is no history of antecedent rheumatism or of endocarditis. Usually in cases of mitral disease of endocarditic origin the second sound is feeble or at least not accentuated. In chronic renal disease with mitral complication the second sound is unduly loud and valvular, especially in the aortic area. Chronic nephritis is much more liable to produce endocarditis than is exophthalmic goiter, as is proved by the relatively greater frequency of mitral stenosis in the former than the latter disease.

In the case reported, a double lesion of the mitral valve exists, with great enlargement of the heart and with cardiac inadequacy. The etiology of the valvular lesion comes under discussion. Exophthalmic goiter and chronic nephritis, both well established, exist, and either is capable of producing mitral disease. Two organic lesions, regurgitation and stenosis, are clearly indicated in our case by the double murmur presystolic thrill, and extensive consecutive changes in the heart chambers. This at once eliminates the purely mechanical element as an acceptable explanation of the lesions and marks the case as of inflammatory origin. Exophthalmic goiter is excluded by the profound character of the organic changes in the heart, for neuro-cardiac disturbance of itself is incapable of such consequences. Chronic Bright's disease is far more deleterious in its influence on cardiac welfare than is exophthalmic goiter, and in its full development the nephritic heart is often a very large and defective organ. The element which brings about such dire consequences to the heart is high peripheral resistance in the arterial field.

In this particular case no material increase of systolic blood pressure was noted during the period of observation, and the sphymogram failed to reveal the

element of tension characteristic of the nephritic state. Whether this effect was due to the low vasomotor tone of the accompanying exophthalmic goiter or was directly attributable to the weak cardiac state I am unable to say, although inclining to the latter opinion, since exophthalmic goiter is a hypertensive disease rather than the reverse. In view of these facts, we may conclude that the cardiac lesions are the result of antecedent endocarditis although it is fair to presume that the circulatory state is greatly aggravated by the associated diseases. The absence of a rheumatic history can not be taken as negative evidence.

No direct association exists between exophthalmic goiter and nephritis, although transient albuminuria has been noted during the periods of acute disturbance. Chronic Bright's disease is not numbered among the epiphenomena of exophthalmic goiter, although there is no reason to believe that the toxemia of the latter disease is incapable of setting up degenerative renal change if long enough continued.

Diabetes and chronic Bright's disease, on the contrary, are very frequently associated. In a consideration of this subject presented before the American Medical Association in 1903,[1] I demonstrated that the average of diabetics displaying albuminuria was over 43 per cent. The renal changes are of the nature of chronic interstitial nephritis and result from long-continued irritation of the renal secreting structure.

In the case under discussion there is small likelihood of any relation existing between the diabetes and Bright's disease. The latter is out of proportion to the former and displays an activity seldom observed in the nephritis of diabetes, which is, as a rule, a mild and slowly-progressive dystrophy. The mild character of the diabetes in this case precludes the possibility of such connection.

The interpretation of retinitis in cases displaying both glycosuria and albuminuria offers considerable difficulty. The retinitis of diabetes possesses no distinguishing mark that will enable us to differentiate it from retinitis nephritica. We must depend on other evidence than that furnished by the ophthalmoscope to determine this point. The prognostic value of retinitis is practically the same in diabetes as in Bright's disease, i. e., it is a terminal symptom. Retinitis does not develop in diabetes until late in the disease and is attended by a fully-developed diabetic state, with the patient in bad general condition. Under such circumstances, the glycosuria is not likely to prove amenable to diabetic control and polyphagia, polyuria, etc., will exist with progressive emaciation and increasing adynamia. In this case some doubt existed after ophthalmoscopic examination as to whether the retinal changes were produced by the diabetes or by the nephritis. This uncertainty was dispelled by the behavior of the case under treatment and the subsequent complete development of the retinitis.

103 State Street.

1. THE JOURNAL A. M. A., Aug. 8, 1903.

The profession of the Northwest should be largely represented at the Portland session, and, since the opportunity is offered to take a most interesting journey at a comparatively slight expense, we advise every one of our readers who can possibly do so to take his vacation this year in this way.—*St. Paul Med. Jour.*

THE NORMAL AND PATHOLOGIC HISTOLOGY OF THE AORTIC AND MITRAL VALVES.

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BOSTON. PORTLAND, ME.

At the suggestion of Dr. Councilman, we have undertaken in the last few years the study of the aortic and mitral valves from hearts of different ages, representing both normal and pathologic conditions. The study was undertaken in the first place to obtain more definite ideas of the normal structure of the valves, particularly the amount and relation of different tissues entering into their composition; further, to determine the period at which degenerative lesions first appear in the valves and the relation of these degenerations to the different tissues; and finally, to study the relation between such degenerative changes and acute infections.

The work will be considered under these heads:

1. Normal structure of valves and normal variations of structure with age.
2. Degenerative lesions.
3. Acute infections in relation to degenerative lesions.

TECHNIC.

The specimens were obtained from autopsies on 42 hospital patients, varying in age from a child, which died at birth, to a man of 60. The autopsies were made from 12 to 48 hours postmortem. All the hearts were apparently in a good state of preservation. In almost all cases the mitral and aortic rings were cut out together, washed gently, and hardened at once in Zenker's fluid—celloidin was used for mounting in all but a few cases, for these paraffin was used.

The sections were cut out as follows: A segment about one-fourth inch wide was cut from one of the cusps of the aortic valve, including its widest portion. Longitudinal sections of these were used for staining. In the same way, a segment of the broadest portion of the mitral curtain (at the base of the aortic valves) was taken and cut longitudinally, or sometimes several segments were removed when the valve presented any peculiar appearances.

Three sets of stains were used for each specimen. One section was stained with Mallory's differential connective tissue stain, a second with Weigert's elastic tissue stain, and a third with hematoxylin and eosin.

The first of these was found most useful for studying the general anatomy of the valves. The second gave beautiful pictures of the elastic tissue. The third brought out some peculiarities of the staining reactions of the various tissues, and showed best the morphology of the cells and muscle tissue.

1. NORMAL STRUCTURE OF VALVES AND NORMAL VARIATIONS OF STRUCTURE WITH AGE.

Standard works on histology give very meager descriptions of the heart valves. Kölliker describes the auriculoventricular valves as composed of a strong layer of fibrous tissue with abundant elastic fibers running out from the fibrous ring about the valve orifice, each surface being covered with a layer of endocardium which is thicker on the auricular side. He says that the semilunar valves have the same structure, but are thinner.

The works of most of the older writers are either insufficient or inaccurate. Luschke[2] was one of the

1. Köllker: Handbuch der Gewebelehre. Sixth edition, vol. iii, p. 607.
2. Luschke: Virchow's Arch., vol. iv, 1852.

earliest to describe, and to demonstrate by injections, blood vessels in the auriculoventricular valves (1852), Later (1878), he stated the vascularity of the semilunar valves.[3] There was considerable controversy over these observations. Coen[4] found the mitral valves vascular, but the aortic valves not vascular. Darrier,[5] in a careful work in 1895, found that semilunar valves never contained blood vessels; that a normal tricuspid never contained them; that the large curtain of the normal mitral valve, where its base is applied to the aortic valve, contained numerous vessels as far out toward its edge as the muscular layer extended (i. e., one-fourth way in the infant and one-sixth in the adults); that in pathologic conditions the whole valve might be abundantly supplied with vessels.

We find no accurate observations on elastic tissue

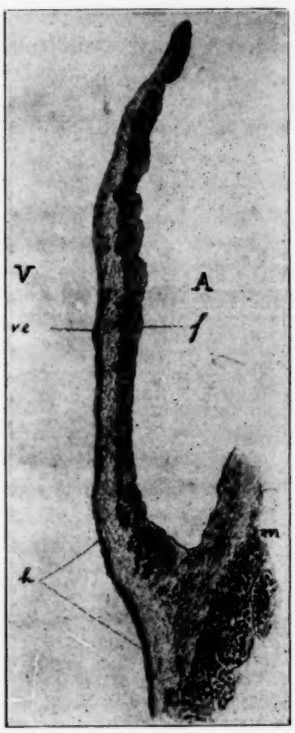

Figure 1.

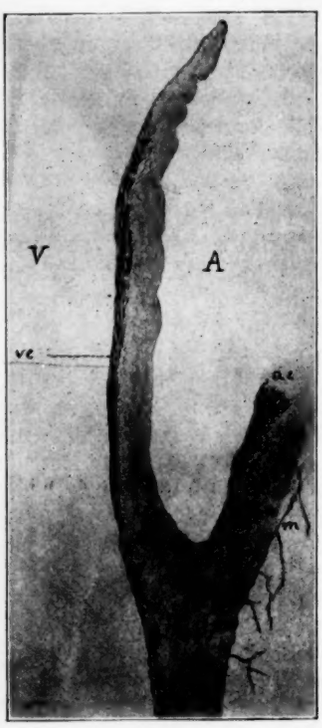

Figure 2.

Fig. 1.—Aortic valve. Age 15 months. V, ventricular side; A, aortic side; ve, ventricular elastic layer; f, aortic fibrous layer; h, hinge area; m, muscle. (Mallory's stain, low power.)

Fig. 2.—Aortic valve. Age 15 months. V. Ventricular side; A, aortic side; ve, ventricular elastic layer; ae, aortic elastic layer; m, muscle. (Weigert's elastic tissue stain, low power.)

in the valves up to 1895, when Seipp,[6] in a work on elastic tissue of the heart, goes into the subject at length. A summary of most of the literature on the subject can be found here. Seipp states that the stains used by most previous observers did not give a correct impression of the elastic tissue in the valves. He used orcein and seems to have obtained very good results. In the main, our observations agree with his.

Only a few writers give a detailed description of the tissues entering into the various layers of the valves. Curtis[7] enumerates four distinct layers of the semilunar valves, but does not describe them in detail. Veraguth[8] describes various layers of the auriculoventricular and semilunar valves according to the appearance of the cells and intercellular substance, and according to the embryology of the structures as given by Hertwig.[9]

According to Veraguth, the valves consist of five layers, as follows:

1. Under the endothelial covering of the valve a thin layer of tissue rich in cells with small spindle-shaped nuclei and some with larger nuclei.

2. Under this, a more distinct zone of a few large cells (as 6-1 to cells in first layer) with much intercellular substance.

3. In the center, a layer of fibers running parallel to the rim of the valve and especially marked (in case of auriculoventricular valves) where the chordæ tendineæ are attached. This layer also possesses a few large cells.

Nos. 4 and 5 correspond to 2 and 1, respectively, on the other side of the valve.

In the mitral valve the central layer is pronounced, but in the semilunar valves it is practically wanting, so that the valve by the union of layers 2 and 4 consists of but three layers.

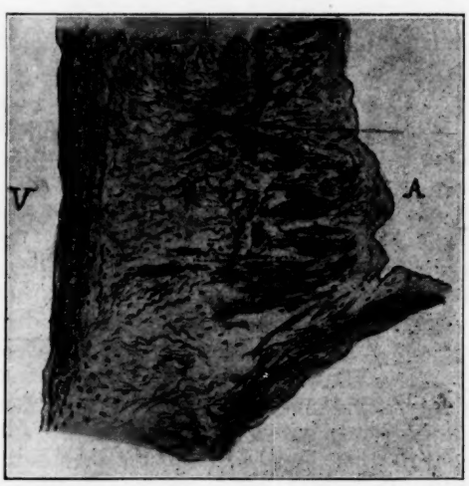

Fig. 3.—Aortic valve. Age 15 months. Shows "hinge area." V, ventricular side; A, aortic side. Shaded area on ventricular side contains elastic tissue and a few scattered connective tissue fibers. Central portion composed of very loose tissue fibers. Denser tissue on aortic side. (Mallory's stain, high power.)

This arrangement, he says, is borne out by the developmental appearances of the valves in the embryo. According to Hertwig,[9] the auriculoventricular valves are formed by a fibrous degeneration of muscle tissue, which originally surrounded a small auriculoventricular opening. This fibrous tissue is covered on both sides by a layer of "gelatinous" tissue lining the heart. The semilunar valves, being composed only of an outfolding of this same "gelatinous" tissue, have not the same fibrous center.

Veraguth[8] concludes that the two outer layers he describes are remains of the embryologic "gelatinous" tissue mentioned above, and that his central layer in the auriculo-ventricular valves is the fibrous degenerated muscle layer. The valves, according to him, are symmetrical as to their two faces, and if slit down the middle between them would show similar halves.

3. Luschke: Verhandl. der phys.-med. Gesellschaft in Würzburg, 1878.

4. Coen, E.: Ueber die Blutgefässe der Herzklappen. Arch. f. microsc. Anat., vol. xxvii, pp. 397-403.

5. Darrier, J.: Les vaisseaux des valvules du coeur chez l'homme à l'etat normal et à l'etat pathologique. Arch. de Physiol., No. 5, July, 1888, pp. 35-59.

6. Seipp, L.: Das elastische Gewebe des Herzens. Anatomische Hefte, No. 17, vol. vi. 1895-6, pp. 63-116.

7. Curtis, F.: Structure des Valvules sigmoides de l'aorte, etc. Societé de Biologie, vol. xl, 1888, pp. 591-594.

8. Veraguth, O.: Untersuchungen über normale und entzundete Herzklappen. Arch. f. pathol. Anatomie, vol. cxxxix, pp. 59-80.

9. Hertwig: Embryologie. Third edition, 1890, p. 457.

This assertion we find to be more nearly true of the aortic valves than of the mitral; but even in the latter the distribution of the elastic tissue on the two faces is not at all the same, and the layer of muscle so often seen is always near the auricular surface. Of the aortic valve, this is not true at all, as can be seen from the drawings accompanying this article.

The following description is from normal aortic and mitral valves of various ages, cut and stained by the methods already described.

A. Normal Aortic Valves. From Birth to Perhaps Five Years of Age.—The valve is composed of (1) fibrous and (2) elastic tissue.

1. Fibrous Tissue: This tissue is densest on the aortic side of the valve. It is denser toward the tip than at the base. The fibers of the aortic side are for the most part cut in cross section, i. e., their direction is circular. Some, however, are longitudinal or nearly so. Cells are not numerous. In the middle plane of the valve, the fibrous tissue is not dense. The fibers are arranged in small spiral bundles, some of which run in the long axis of the valve (especially near the ventricular side), while others run from one surface toward the other. The cells are larger and more numerous. Many of the fibers are extremely fine and

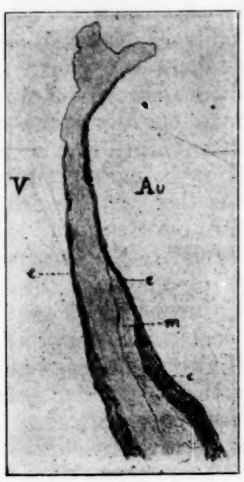

Figure 4.

Figure 5.

Fig. 4.—Mitral valve. Age 15 months. V, ventricular side; Au, auricular side; e, elastic layer; m, muscle. (Weigert's elastic tissue stain, low power.)

Fig. 5.—Mitral valve. Age 15 months. V, ventricular side; Au, auricular side; c, chordæ tendinæ; m, muscle. (Mallory's stain, low power.)

wavy (this layer which we have spoken of as lying in the middle plane, is really nearer the ventricular side, directly beneath the ventricular elastic layer. It is so spoken of because it lies between this layer and the dense fibrous tissue of the aortic side. If this latter layer is unusually narrow it really appears to lie in the middle.) On the ventricular side of the valve there are only a few wavy, longitudinal fibrous bands mingled with the elastic tissue of the part.

At the base of the valve, in what might be called the "hinge area," the middle layer of very loose fibrous tissue is so broad as to occupy nearly the whole width of the valve, but immediately beyond this it becomes much thinner. Toward the end of the valve it is invaded by a few longitudinal bundles of fibers of the ventricular side, and finally is obliterated, the dense layer of the fibrous tissue on the aortic side meeting the ventricular elastic layer (Fig. 1).

2. Elastic Tissue: This tissue is densest on and practically confined to, the ventricular side of the valve. The fibers run for the most part longitudinally, immediately beneath the surface endothelium. Among them are a few crosscut (i. e., circular) fibers, and beneath the main layer of longitudinal fibers these crosscut fibers form a fairly distinct band.

The elastic layer begins at the base of the valve as a very dense band of fibers in which the individual threads can not be distinguished. It broadens as it goes out on the valve so that the individual fibers can be clearly seen, being, at its broadest part, from two-thirds to three-fourths of the distance from base to tip. Here the fibers invade the middle layer of the valve to a considerable extent. Beyond this the layer thins out rapidly, though tissues having the same appearance as that in which the elastic fibers are embedded run to the end of the valve as a definite layer containing almost no connective tissue fibers. This appearance is well shown in specimens stained by Mallory's connective tissue stain. Here this layer is seen extending well to the tip of the valve, but with the elastic stain no elastic fibers are seen beyond the inner three-fourths. Just at the tip of the valve, on the ventricular side, a well-marked layer of circular fibers is often seen (Fig. 1).

On the aortic side of the valve there is a thin layer of crosscut elastic fibers, immediately beneath the endothelium. This layer keeps its same character throughout the length of the valve. Among the fibrous tissue at large, occasional elastic fibers are found, running in various directions.

The "hinge portion" of the valve is that part particularly adapted to easy bending. In it the fibrous tissue of the aortic side is thin, the central loose tissue is abundant, and the elastic layer of the ventricular side is thin, dense and strong. Its size varies considerably in different valves. It often takes a peculiar blue stain with hematoxylin (i. e., the loose central part), analogous to myxomatous tissue, but the continuation into the main part of the valve seldom shows this reaction (Fig. 3).

B. Normal Adult Aortic Valves.—The fibrous tissue is again densest on the aortic side. The bundles are thicker, less wavy, and with more tendency to longitudinal arrangement than in the infantile valve. The valve is less cellular. The middle plane of the valve, which in the infant is occupied by a fairly broad band of very loose cellular tissue, is much narrower in the adult, being encroached on by the dense fibrous tissue of the aortic side and driven up against the ventricular elastic tissue layer. The latter contains rather more fibrous tissue.

The elastic tissue is arranged as in the infantile valve, but is denser and continued on both sides more distinctly to the tip of the valve. It seems as if the elastic forming layer (noticed along the ventricular side of the valve) of the infant had formed its elastic fibers completely in the adult. There are also more elastic fibers mingled with the fibrous tissue at large and in the "hinge area."

While the relation of fibrous and elastic tissue is constant in valves of different ages, there is a progressive change toward an adult type. This consists of a thinning of the valve in proportion to its length; in a condensation of the fibrous tissue, the densest part of which, lying in the infant near the aortic surface, comes to occupy the greater proportion of the width of the valve,

while the loose layer in the middle plane becomes reduced in thickness; and in a considerable increase in the quantity of the elastic tissue both on the valve surfaces and in the valve substance.

In many infantile valves the tip of the valve forms a sort of knob connected with the rest by a very thin portion. This arrangement we have never seen in adult valves. In one adult valve in our collection a few isolated bundles of muscle fibers, circular in direction, are seen in the ventricular elastic layer.

C. Normal Infantile Mitral Valves (large mitral curtain).—The mitral valve is somewhat stronger, thicker and less flexible than the aortic. It consists of a fibrous plate which tapers a little from base to free edge, where it becomes differentiated into the chordæ tendineæ. It is supplied at its base and for a variable part of its length with cardiac muscle. It possesses a thick covering of elastic tissue on both its surfaces at its base, but the layer on the ventricular surface thins out rapidly as it passes out on the valve (Figs. 4 and 5).

The fibrous tissue occupies the greater part of the thickness of the valve. It is densest on the ventricular side. The fibers are more generally circular in direction and the cells rather few in number. Under the elastic layer of the auricular side of the valve the fibrous tissue is thinner, more cellular and consists of wavy bundles either longitudinal in direction or running from one surface of the valve toward the other. This arrangement corresponds to that of the aortic valves, but in the mitral valve the dense fibrous layer occupies much more of the thickness of the valve. As the region of the chordæ tendineæ is reached the fibrous bundles becoming longitudinal in direction stream out into them from the ventricular surface.

The elastic tissue is seen on both sides of the valve. On the ventricular side it is continuous with the elastic layer of the ventricle and is thick and strong at the base of the valve, being composed of wavy layers of fibers longitudinal in direction. It thins out rapidly and dwindles to nothing about two-thirds of the way from base to tip. On the auricular side the elastic layer is equally thick and sometimes denser. It is composed of many layers of fibers longitudinal in direction and diminishes in thickness as it extends outward. At a point from two-thirds to three-fourths of the distance from the base to the tip it spreads out away from the auricular surface, but part of it can be seen continued beneath the endothelium nearly to the tip. It is embedded in the same sort of tissue as that on the ventricular side of the aortic valve and has among its fibers and beneath it a few fine wavy bundles of fibrous tissue. Between the main fibrous layer and the wedge-shaped area of muscle at the base of the valve is a layer of elastic tissue generally circular in direction. There are a few elastic fibers among the muscle fibers.

In a general way the arrangement of elastic tissue resembles that of the aortic valve, but differs in the thickness of both layers at the base. There are occasional elastic fibers in the fibrous tissue occupying the middle plane of the valve.

Muscular Tissue.—The mitral curtain possesses a strong wedge-shaped area of muscle at its base. The muscle is of the usual cardiac variety and its fibers are circular in direction. The amount of this muscle and the extent to which it runs out on the valve vary widely. In some cases it extends out as a long wedge for nearly half the length of the valve. In other cases it ends abruptly at the base. It is always found immediately beneath the auricular elastic layer. Sometimes the main mass of muscle is confined to the base, while a thin band of muscle broken up into small bundles extends out nearly to the tip. In such cases it lies in the auricular elastic layer. Occasionally isolated bundles are seen scattered along the layer.

D. Adult Normal Mitral Valve.—The adult mitral valve bears the same relation to the infantile as does the aortic. The elastic tissue is much more fully developed and the fibrous tissue more dense. The chordæ tendineæ can now be seen to possess a thin longitudinal layer of elastic fibers close to their surface.

The valve is much longer in proportion to its thickness, and the muscular portion shorter as a general thing in proportion to the whole length of the valve. In all cases in which muscle tissue is seen definite blood vessels are found and may extend well out to the edge of the valve. They are always with the muscle on the auricular side.

II. DEGENERATIVE LESIONS.

Under this head will be considered thickenings whose pathologic character is in doubt. There is little in the literature on this subject. Veraguth[8] describes certain thickenings on the valves, which apparently are not pathologic in character. These are seen at any age. They are apt to appear at the points where the valve surfaces come in contact with each other in closing, and are apparently developed from his "second" layer. They consist, he finds, of a very dense connective tissue formation, sometimes almost homogeneous in appearance and containing a few drawn-out, shrunken cells. He considers them to be a development from embryologic remains which take on growth, perhaps, because of irritation from the coming together of the valve surfaces. He points out that they are not a result of hypertrophy from work, as they are found in the very young, nor are they remains of acute infections, as the layer between them and the surface is unchanged.

We have frequently found such thickenings accompanied or unaccompanied by definite pathologic changes. In aortic valves they occur on the ventricular surface, where the valves meet in closing. They are conical or rounded in shape. They consist of tissue such as is described above, but contain in addition many fine elastic fibers. They appear to grow, in fact, from the ventricular elastic layer which forms their base. We have found them in a child 5 years old and at various other ages, but in later life they are generally accompanied by certain degenerations in the valves which will be described later. In addition to the hypothesis given by Veraguth as to their origin, it might be suggested that they are an adaptation acting to correct a faulty closure of the valves. They are best seen on the aortic valves and often on one or perhaps on two cusps only.

Degenerative lesions in the aortic valves are of the following types: (a) mucoid, (b) fatty.

(a) *Mucoid Degeneration.*—In the normal anatomy of the aortic valves already described, a layer of loose cellular tissue was mentioned, very wide at the "hinge area" of the valves and running from here toward the free edge, between the ventricular elastic layer and the dense aortic fibrous layer. In young valves this was found to take at times a deep blue stain with hematoxylin, thus resembling myxomatous or mucoid tissue.

In older valves, tissue having this same appearance is seen as a degenerative lesion more commonly than any other. It occurs toward the tip of the valve beneath the ventricular elastic layer and encroaching con-

siderably on the dense fibrous tissue of the opposite surface. Such areas show an increased number of large cells with round or oval nuclei and few connective tissue fibers, many of which appear fragmented. While they generally stain blue with hematoxylin, they sometimes take practically no stain at all, there being little intercellular substance left. Stains for elastic tissue show a few elastic fibers.

This condition very frequently accompanies and may occur in the midst of large thickenings on the valve surface. The youngest valve in our collection which shows such a degeneration is one cusp of an aortic valve (the other cusps being normal) of a woman, aged 24, dead of pneumonia and empyema. The degenerate area is beneath a moderate thickening on the ventricular surface. The natural explanation of this condition is that the thickening by interfering with the nutrition of the valve caused the degeneration, for such myxomatous or mucoid tissue is often seen in the midst of very large thickenings. Attention has already been called to the fact that the layer in which the myxomatous degeneration is found is one which in young valves sometimes presents something of the same appearance throughout its length.

Mitral valves, like the aortic, are apt to show thickenings on the auricular side where the valves meet, but we have not noticed this in young valves, and the thickening is apt to include the whole width of the valve. Mucoid degeneration is very common in the midst of them.

(*b*) *Fatty Infiltration.*—In aortic valves this occurs most often midway from base to tip, almost never near the base, and frequently throughout the outer half. It occupies the middle plane of the valve encroaching much more on the ventricular elastic layer than on the dense fibrous tissue. The majority of our valves of over 30 years show more or less of this condition, which is usually accompanied, when extensive, by a generally diffused thickening of the ventricular surface, analogous in this respect to the sclerotic changes in arteries. The fat cells are often very large and are apt to lie in groups among the elastic fibers, often pushing them aside.

The fatty changes in mitral valves take place in the auricular elastic layer and just beneath it. In distribution and arrangement they resemble those in aortic valves. They are more often seen, however, near the base of the valve than in the aortics.

III. ACUTE INFECTIONS IN RELATION TO DEGENERATIVE LESIONS.

We hoped on beginning this investigation to find some degenerative lesions directly connected with acute infections, such as pneumonia, typhoid, diphtheria, etc. It has been disappointing, therefore, to find that in valves of those dead of such diseases there appear only degenerations which are evidently chronic, or at least none which we can recognize as acute. In fact, we find in no valves from pneumonia patients, etc., a predisposing cause for acute endocarditis.

A good account of the pathologic anatomy of acute valve infections is given by Veraguth,[8] who quotes experimental results of other investigations on this subject. We have only seen one instance of an acute infection in valves not previously diseased (i. e., thickened). In this case (mitral valve) there was a destruction of tissue on the auricular side of the valve near the tip, extensive fibrin formation in the necrotic tissue, and beneath this, in the main substance of the valve, a considerable proliferation of large connective tissue cells. Large masses of streptococci were seen in the necrotic area. The great increase in the number of connective tissue cells about the infected area is spoken of by Veraguth, who states that apparently they take the place of polynuclear leucocytes, which are not present to any extent. These cells are large, round and oval in shape, with a rather deeply stained granular protoplasm and a comparatively small round nucleus. They resemble plasma cells. No blood vessels are seen, new or old. It is an interesting fact that the pulmonic valves were severely infected in this case, while the aortic valves were normal.

A number of our specimens showed acute infections superimposed on chronic thickenings. Most of these were in mitral valves. They showed a fibrinous or fibrino-purulent exudate on the surface and extending into the valve substance for a varying distance, always from the auricular surface. In many cases, when the valve was much thickened, there was a considerable collection of what looked like plasma cells about the blood vessels, which were often numerous and sometimes quite large. In these cases the cells seemed to be connected with the repair of the valve, as young blood vessels and young connective tissue cells were in abundance.

In some cases the relative age of the different depths of a thickening could be told fairly well. Furthest from the auricular surface the tissues and blood vessels were richly supplied with elastic fibers. Nearer the surface the tissue became less elastic and more like ordinary scar tissue, while the vessels were smaller and younger. On the surface, when the repair from the last attack was still going on, the young connective tissue cells were large and abundant, and the vessels thin-walled and capillary. Such conditions would seem to show that the thickening was due to repeated attacks of acute infection. At other times it was impossible to tell whether the thickening was of the benign type described earlier or of the type we have just described. We think that the vascularity of the thickened tissue would generally show the difference, but further observations are needed.

We have not noticed in mitral valves such extensive destruction of a large, thickened flap as in aortic cases. In one of these a very large, thickened tip was practically eaten away from the ventricular side. It seems evident that a valve which has no internal blood supply can not repair itself so well as one in which the blood supply is abundant. This valve in which the destruction of tissue was extreme, possessed only a number of capillary vessels with no elastic tissue in their walls; vessels which were connected apparently with the surface of the valve only, and were little more than blood spaces. Indeed, there was little attempt at repair in this case, and it would seem as if an aortic valve stood a poorer chance of repair without deformity than a mitral valve under similar circumstances.

We can only conclude from our observations on acute infections in degenerate and thickened valves that mucoid and fatty degenerations do not apparently predispose to infection; that "benign thickenings" do not predispose to infection, though it is hard in the case of the mitral valve to tell whether a thickening is benign or due to repeated acute attacks; that the thickenings in mitral valves when infected are better repaired than in those of aortic valves; and that acute toxemias do not cause degenerations (at least none that we can recognize) predisposing to infection.

GASTROENTEROSTOMY.*

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It is conceded by the best authorities in both surgery and internal medicine that efficient drainage by some of the various surgical operations devised is the correct and only successful treatment for many diseased conditions of the stomach and duodenum, usually diagnosed as chronic indigestion; and for hemorrhage in acute ulcer of the stomach that resists medical treatment and is endangering the life of the patient; or for continued and profuse hemorrhage in chronic gastric ulcer; and for perigastric adhesions or stomach infiltration and contraction, that disturb the physics of digestion. There is not a consensus of opinion by our best abdominal surgeons, however, as to the method of drainage that accomplishes the best results in all cases. Hence, let us consider the facts bearing on the operations that have been performed, and decide which one of the several is the most logical, and has given and must give the best immediate and ultimate results. Pyloric divulsion by the method of Lorata and Hahn has proved unsatisfactory, seldom giving permanent relief, and sometimes committing a traumatism that intensifies the trouble. While the Heineke-Mikulicz pyloroplasty and its modifications by Richardson, Koeppelin and Jaboulay have given better results, it is an operation seldom indicated and is practically obsolete. Jaboulay's gastroduodenostomy, as modified by Duranti and Henle, has given better results than pyloroplasty, but it is far from satisfactory, and in many cases is impracticable, and cannot be performed because of extensive adhesions. In establishing stomach drainage into the duodenum, Villard's subpyloric gastroduodenostomy as modified by Kocher's lateral gastroduodenostomy, with vertical division of the duodenocolic peritoneum, and Finney's gastropyloroduodenostomy, are the most popular, and will probably give better results, but these operations are too recent, and the cases too few to enable us to give a positive opinion of their merits, and there are many cases in which they cannot be performed, or are contraindicated. Their simplicity can not recommend them, because gastroenterostomy can be performed as easily and as quickly, and with a mortality as low. Then in excluding these operations in favor of gastroenterostomy, we must decide which method of draining the stomach directly into the jejunum has the lowest mortality, and gives the best immediate and final results.

The Wolfler anterior anastomosis and the von Hacker posterior anastomosis, with their modifications, must be carefully considered, in order that we may arrive at a conclusion as to the relative value of each. In a paper read before the Kentucky State Medical Society, in May, 1904, I made the following statement:

Anterior gastroenterostomy as an operation of election must very soon become obsolete, and will finally be accepted only in rare cases as an operation of expediency or necessity to give temporary relief, or to meet special abnormal conditions.

The ideal operation of election must eliminate the intestinal loop, and this can only be done by the posterior retrocolic method, attaching the jejunum near its origin under the transverse mesocolon to the lowest part of the stomach. This prevents the vicious circle and regurgitant vomiting—the most fatal complications.

* Read before the American Gynecological Society at Niagara Falls, 1905.

Anterior anastomosis has given many excellent results, and the complications of the earlier operations have been greatly diminished because of the more correct appreciation of the proper point of the stomach and jejunum to be anastomosed, and the improved technic in the operation. In the older operations, the opening into the stomach was made too high, and often not in the proper direction, and the jejunum was attached too near or too far from its origin under the transverse mesocolon; hence, stomach drainage was imperfect, permitting a residuum of decomposed stomach contents with bile and pancreatic secretions, which caused much trouble, often resulting in the passage of food and secretions into the proximal end of the anastomosed bowel, with a high mortality or subsequent complications. Of the 35 gastroenterostomies performed between 1881 and 1885, only 12 patients recovered; the mortality being 66.71 per cent., and of the 1,978 gastroenterostomies up to 1899, the mortality was 34.4 per cent., but fortunately it is now below 5 per cent. in the anterior anastomosis, but the immediate and subsequent complications and ultimate results are greater than in the posterior anastomosis. Robson's mortality by the posterior retrocolic method, in about 200 cases, including cancer cases and cases of acute gastritis, is 4 per cent., and in his private practice, including 15 cancer cases, it is 3.2 per cent., and in 77 simple cases, 2.62 per cent.; and Moynihan, in 191 operations, had but five deaths, 2.63 per cent., with practically no complications. Three of these deaths occurred in his 27 cases in which the patients were operated on for hemorrhage where the condition was desperate; one death was caused by suppression of urine, and another was caused by hernia of the intestines through the opening in the mesocolon into the small omental bursa. Mayo's mortality in his last 150 cases is under 3 per cent. Kocher, in the last edition of his book on operative surgery, reports 100 anterior gastroenterostomies with three deaths, none due to the operation direct, but he now prefers the posterior retrocolic attachment.

Neither Robson, Moynihan, Kocher, von Mikulicz, Mayo, Murphy, Park, or other surgeons report any vicious circle or regurgitant vomiting, or subsequent closing of the gastrojejunal opening following the recent operations by the posterior retrocolic attachment with no loop, conditions frequently reported by Mayo and other surgeons following the anterior anticolic attachment, causing death, or requiring a secondary operation. The side-to-side jejunal anastomosis prolongs the operation, increases the dangers, disturbs normal peristalsis, and does not always prevent the vicious circle; the other mutilating operations of closing the pylorus or proximal end of the jejunum by resection, wire or suture constriction, are superfluous and may cause immediate or subsequent bad results. The belief that the passage of bile and pancreatic secretions into the stomach is responsible for bad results, has been disproved by actual observation in experiments in animals and in operations on man, and it is probable that their presence in the stomach may so alkalize the stomach contents as to aid in preventing jejunal ulceration in the distal end, a complication that has occasionally followed gastroenterostomy.

The observations of Fantino, Hartman, Carle, Sipault, Mintz, Clumsky, Kautsch and Mathieu seem to show that in all cases of gastroenterostomy the bile and pancreatic secretion pass through the gastrojejunal opening into the stomach, causing no regurgitant vom-

iting or disturbance in digestion. We arrive at the same conclusion of the innocuousness of bile and pancreatic secretion in the stomach, in studying the case of Moynihan, in which he severed the jejunum near its duodenal junction, closed the proximal end and then implanted the distal end in the anterior wall of the stomach, thereby causing all the bile and pancreatic secretion to pass into the stomach. This caused neither vomiting or disturbed digestion. The same is true of Steudel's experiments on dogs, and is also true in the broad experience in gastroenterostomy by Robson, Czerny, von Mikulicz and Moynihan. Hence we must look for some other cause for the vicious circle and regurgitant vomiting, since neither the presence of bile or pancreatic secretion causes the trouble, and this will be found in the election of methods, based on a false assumption of the physics and physiology of digestion, and a defective technic.

The Raux and Doyen operation, theoretically suggested by Wolfler, of cutting the intestine across and implanting the distal end into the stomach, and the proximal end into the side of the distal, may prevent regurgitant vomiting; but it is difficult and prolonged and if universally accepted would have a mortality that would be prohibitory. The stomach anastomosis by this method may be made anteriorly or posteriorly, but the posterior method is preferable and the results better.

Ulcer in the upper part of the attached jejunum has followed this operation, but Raux claims that this is because the proximal limb was attached too low on the distal limb, though further observation is necessary to prove the correctness of this statement, for in his operation the bile and pancreatic secretion cannot enter the stomach to modify in any way the degree of hyperchlorhydria, or to change the character of the stomach contents.

While the immediate complications and sequelæ of Wolfler's anterior anticolic gastroenterostomy have been minimized, they are still far in excess of the complications and sequelæ of the modifications of von Hacker's posterior retrocolic anastomosis without a loop, for it does not prevent the vicious circle; it greatly disturbs the normal relations of the jejunum and transverse colon, and it does not insure permanency in the gastrojejunal opening, objections that do not obtain in the posterior retrocolic attachment near the beginning of the jejunum. I, therefore, assume that with fewer complications and sequelæ, and with better immediate and subsequent results, the posterior retrocolic gastroenterostomy near the duodeno-jejunal flexure, in the near future will be accepted by most of our best surgeons as the operation of election, the anterior method being reserved for conditions that contraindicate the posterior attachment, such as extensive posterior stomach adhesions that cannot be separated, tumors, cancerous infiltration, etc. This is now unfortunately far from true in the United States, for most of our published papers during the last twelve months have advocated a jejunal loop, usually followed by an enteroanastomosis; and many of them recommend closure or narrowing of the pylorus or proximal jejunum by the method of Fowler, Scott and Mattolie, or Doyen and Chaput. Mayo, who has probably performed as many gastroenterostomies as any other surgeon, until recently has made the anterior anticolic attachment, often supplemented by an enteroenterostomy, or by closure of the pylorus or proximal limb of the jejunum; and in nearly all his posterior retrocolic attachments he also made a ten-inch loop with an enteroenterostomy, and closed the proximal limb by suture plication. He seems to have been dissatisfied with these methods, and by a practical evolution in the work of a great surgeon, is now doing the posterior retrocolic anastomosis without a loop, and attaches the jejunum one and one-half inches below its origin. Mayo's change from these complicated operations that so greatly disturb the normal relations, and the physics and physiology of digestion, to the simple attachment of the jejunum to the posterior inferior part of the stomach, with the elimination of the loop, is a most positive proof of the superiority of the latter method, for the excellence of his technic in his surgical work and his broad experience enable him to interpret logically and to accept correct conclusions.

To enable me to present the exact facts as to the methods, the immediate and final results and complications in gastroenterostomy in the experience of men who have done the greatest number of these operations, I have by personal correspondence obtained the desired information from Robson, Czerny, von Mikulicz, Moynihan, Kochen, Murphy, Mayo, Ochsner, Park, and Deaver, and I am able to give results of the observations in their operations to April 15, 1905. I will first give the technic of the operation I am now doing, with nearly perfect results, and then conclude with a summary of conclusions.

An incision about four inches long is made above the umbilicus, splitting the right rectus muscle about three-fourths of an inch from the median line. The stomach, the pylorus, the duodenum, the gall bladder and the bile ducts, and surrounding structures are carefully examined. If a gastroenterostomy is then indicated, the great omentum, the transverse colon and the stomach are delivered and turned above the incision on the abdominal wall, and covered with gauze wrung out of hot salt solution. A bloodless point in the transverse mesocolon, under a loop formed by the middle colic artery, is selected, and an incision is made into the small omental bursa. This is torn larger with the fingers until it is from one and one-half to two inches in diameter —large enough to allow the posterior wall of the stomach to be easily pulled through. The bleeding is usually insignificant, but, if necessary, a small catgut ligature is applied to the torn vessel. With the left hand above the omentum and the colon, the stomach is made to protrude into the opening in the mesocolon, the posterior wall is caught with the fingers of the right hand, or by a tenaculum or small vulsellum forceps, care being taken not to include the anterior wall. The posterior wall is then drawn by the fingers of both hands well through the opening, and a fold from three to four inches in length is caught in the rubber-covered blades of a long forceps. These forceps is applied obliquely on the stomach from the lowest part of the great curvature toward the cardia. This may be easily and correctly done with the stomach turned over on the abdomen above the incision, before applying the forceps from below upward, and from left to right at an angle of approximately 45 degrees with the median line. When the anastomosis is made in this direction and the stomach is returned to the abdominal cavity, the jejunal attachment from above downward will be at an angle to the vertical line of about 45 degrees from left to right. If the anastomosis is made close to the *plica duodenalis*, when the stomach is returned to the cavity, both stomach and jejunum will sustain nearly their normal relations, there being no loop or twisting of the bowel,

so that the stomach contents may pass uninterruptedly into the distal end of the bowel, and will not pass into the proximal end. The only change, then, from the normal relation and condition, is the attachment of the stomach and the intestine and the gastrojejunal opening, hence there can be no vicious circle or regurgitant vomiting. The stomach, colon and omentum are now returned into the cavity above the incision, the clamped part only being held outside. The jejunum is now picked up on the left side of the spinal column, just under the transverse mesocolon, and a loop three or four inches long is caught in the rubber-covered blades of a long forceps from two to four inches below the duodenojejunal flexure, usually two inches.

Gauze wrung out of hot sterile salt solution is now applied under and around the clamps, so as to protect the peritoneal cavity against any possible infection from leakage of stomach or intestinal contents after the stomach and jejunum are incised. The portions of the stomach and intestine embraced in the clamps are brought evenly together, so that the ends of the blades are at the same level at the bottom of the greater curvature of the stomach, which now lies above, and the lesser curvature below. The stomach and jejunum are now united by a line of continuous sutures, including the serous and submucous coats, beginning at the shank of the forceps and going to the end of the blades at the bottom of the greater curvature. The suture line is from left to right, from the proximal toward the distal end of the bowel, and in the direction of the cardia or lesser curvature toward the greater curvature. The line of suture is never less than two inches and in dilated stomachs it may be three and one-half inches, to give room for a long stomach incision, so as to guard against too much narrowing of the gastrojejunal opening after the stomach finally contracts approximately to its normal size. In dilated stomachs, the incision must be made correspondingly long, and the failure to observe this precaution is responsible for bad ultimate results in stomach drainage, because of too much narrowing of the opening after stomach contraction.

I use the Moynihan needle with a slot eye, curved over half circle. It can be quickly threaded and has a round point which does not cut the tissues of the stomach or intestine or cause hemorrhage or tearing. I use the fine Pagenstecher thread, because it sutures better than the silk, and perfect apposition is more easily assured, but the silk suture may be substituted. I leave a six-inch end at the beginning of the suture, and at the end of the first line of suture the thread is left long enough to complete the second line of sero-serous suture around the gastrojejunal opening after the cut edges of the stomach and bowel have been sutured through all the coats entirely around the incision. After the first line of suture is applied, the stomach and intestine are incised one-sixth to one-fifth of an inch away and above down to the mucous membrane, which pouts in the wound and is removed in an elliptical piece about one-half inch wide, for the full length of the incision, but I do not dissect the mucous coat from its stomach and intestinal attachments, as I do not believe it necessary, and it makes correct suturing more difficult to get perfect apposition of all layers.

The second suture also begins at the proximal end of the jejunum and must include all the layers of the stomach and intestine (serous, muscular and mucous), so as to put the cut edges in perfect apposition and leave no open, raw surface. An end of this suture about six inches long is left, and the suture is drawn sufficiently tight not only to secure perfect union but to control bleeding. It is carried entirely around the opening and tied to the end of the suture left at the point of beginning. The clamps are now unlocked, and if any bleeding point is seen, an interrupted suture is applied, but this will seldom be necessary if the suturing has been carefully done.

With the first (sero-serous) suture left long at the greater curvature of the stomach, a line of suture is now applied above and in front of the gastrojejunal opening to the point of beginning, and tied to the end left. This suture includes the serous and sub-serous coats.

The exposed parts of the stomach and bowel are now gently sponged with gauze wrung out of hot salt solution, and allowed to fall back into the abdominal cavity. The omentum, transverse colon and stomach are again delivered on the abdominal wall and with a catgut suture, the edges of the opening through the transverse mesocolon are attached around the gastrojejunal anastomosis. This is done with from four to six interrupted sutures introduced through the serous and subserous tissues of both intestine and stomach, so as to cover the entire area around the gastrojejunal anastomosis and the outer layer of sutures. This prevents hernia of the small intestines into the lesser peritoneal cavity, and adds protection and strength to the anastomosis. If the attachment of the jejunum is made at the proper distance from the duodenojejunal flexure, the only change from the normal relation is the anastomosis of the two viscera, and the relation of the stomach and intestine otherwise will not be changed. I have made careful examinations of these cases after completing the suturing, and know this to be true. The point of attachment of the jejunum in each case must meet the existing conditions, and in no instance after the operation should there be any jejunal loop or any tension on the intestine because of anastomosis too far from or too near the plica. The abdominal incision is now closed with three rows of catgut sutures. As soon as the patient has recovered from the immediate effects of the anesthesia, he is propped well up in bed. This aids in preventing vomiting and encourages the passage of gas through the intestines. These patients vomit less than my patients on whom laparatomies are performed for other diseased conditions. This may be due to the fact that the stomach contents pass so directly and with such ease into the jejunum. Little, if any, of the bile and pancreatic secretion will go into the stomach, but may modify the acid contents in its passage down the jejunum, and probably aid in preventing peptic ulcer in the intestine below its stomach attachment.

Adhesions are often found between the transverse mesocolon and the posterior stomach wall, but these may usually be separated through the opening in the mesentery, and I have not found it necessary to attempt the separation through an opening in the gastro-colic omentum, but this may be done. All perigastric adhesions are dissected away when it is possible to do so.

Where one is accustomed to its use, the curved needle is far superior to the straight, in applying both the internal and the external layer of sutures. In the introduction of the outer sero-serous suture, by drawing gently between the needle and the last stitch, a little ridge will be raised in front of the suture in both stomach and intestine, which will aid in the introduc-

tion of the needle with ease and accuracy. The best apposition follows the continuous suture with no interruption, and the various other methods of applying the suture in stomach and intestinal surgery, are unnecessary and may be harmful. With experience in the use of the continuous suture with the curved needle, there are few tissues that are more easily and more perfectly sutured than the intestinal tract.

In suturing openings in the intestines, I often use for the inner suture through all the coats, a No. 0 or No. 1 ten-day chromic catgut, with Pagenstecher thread or silk for the outer sero-serous suture, and I have had no leakage. With the adoption of the retro-colic posterior anastomosis near the duodenojejunal flexure at the lowest part of the stomach, there will no longer be any necessity for mutilating operations for closing or dividing the pylorus or jejunum, or for an enteroanastomosis, and the posterior attachment may be made in nearly every case in which a gastroenterostomy is indicated.

While the Murphy button has done much in the evolution of gastric and intestinal surgery, it will not be generally used in the future except in selected cases. If the experience of Ochsner and of some other surgeons, show that equally good results may follow the use of the McGraw ligature, with an outer layer of sero-serous suture, this will be a great advantage over the stomach and intestinal incision, and the method would be generally adopted, for it reduces the operation to great simplicity. The McGraw ligature may be used as successfully in the posterior as in the anterior attachment, and its use practically removes all immediate danger from stomach and intestinal leakage, and the anastomosis may be made without the use of clamps. Let us then hope that the immediate and ultimate results with the ligature may be all that its advocates claim or wish.

The illustrations are intended approximately to show the relations of the stomach and jejunum before and after gastroenterostomy, with the elimination of the loop. The stomach and the anastomosed jejunum will lie evenly against the posterior wall of abdomen, and the forward position is an intentional exaggeration for better illustration.

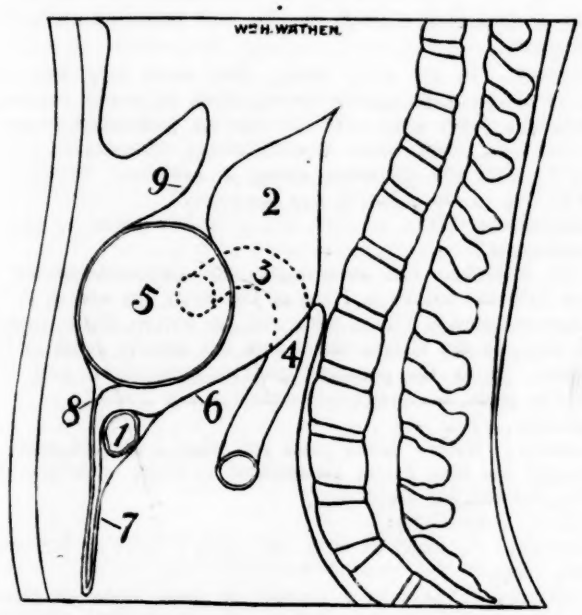

Fig. 1.—1. Transverse colon. 2. Lesser peritoneal cavity. 3. Duodenum behind stomach. 4. Beginning of jejunum. 5. Stomach. 6. Transverse mesocolon. 7. Great omentum. 8. Gastrocolic omentum. 9. Gastrohepatic omentum.

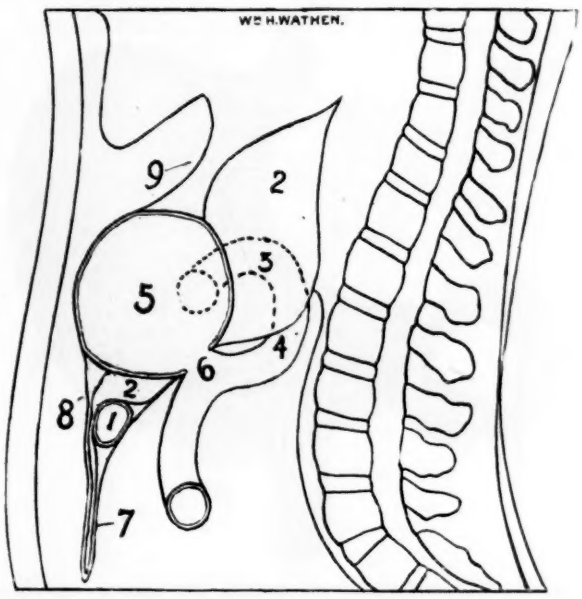

Fig. 2.—1. Transverse colon. 2. Small peritoneal cavity. 3. Duodenum behind stomach. 4. Beginning of jejunum. 5. Stomach. 6. Gastrojejunal opening. 7. Great omentum. 8. Gastrocolic omentum. 9. Gastrohepatic omentum.

The following twelve inquiries, referring to the most important and live question in gastroenterostomy, were mailed to five of the most representative men in stomach surgery in Europe, and five in the United States, and under each of the twelve headings I give the answers in the order in which they were received, making neither change nor comment, so that the reader may in no sense be influenced in his conclusions, as to the trend of thought in the best methods of stomach drainage into the jejunum.

1. Where do you make the anastomosis?

Robson: "Posterior wall of stomach to jejunum, 3 to 4 inches from duodenojejunal junction. My reason for performing the posterior operation is because I saw that the results of anterior gastroenterostomy, both in the hands of others and in my own experience, were not satisfactory, and regurgitant vomiting occurred at times, whereas, from the time I began to perform posterior gastroenterostomy, my results have been satisfactory."

Moynihan: "Opening high in jejunum, and oblique in posterior wall of the stomach, so that position of jejunum is the normal one, and the lowest part of the stomach is drained. A large opening is made."

Von Mickulicz: "It depends on the conditions in such cases. In cancer, where the entire organism is seriously affected, and the question of the operation is of considerable importance to the patient, we usually make the anterior anticolic gastroenterostomy with the Murphy button. Where the conditions are favorable, the suture is preferred; and in such cases the anterior gastroenterostomy is made with an enteroanastomosis to avoid the vicious circle, or the posterior gastroenterostomy is made. The latter will always be done when the conditions are favorable, provided the pyloroplastic operation, including the modification by Finney, is impossible."

Kocher: "Posterior inferior, as described in my text-book on surgical operations."

Czerny: "Posterior, because the parts remain after the operation in normal (physiologic) position."

Mayo: "Posterior, within an inch and a half of origin of jejunum."

Murphy: "I do the posterior gastroenterostomy, making the connection on the stomach wall about 3 inches to 3½ inches

from the pylorus, and in the jejunum from 2 inches to 4 inches from the ligament of Trietze. This, I believe, gives the best drainage of the stomach when the stomach will have restored itself to its vertical position. The opening, however, is not in the most dependent portion of the stomach in the majority of cases at the time of operation, as there is so much gastrectasis and gastrocolitis that the curvature is much below its level. It rapidly assumes a vertical position, and this point becomes the most dependent position of the stomach. I use the straight loop of the jejunum at that point, because it is the natural resting place of the stomach on the jejunum, gives the best drainage and avoids dilatation which occurs in the jejunum when a loop is formed."

Ochsner: "At the present time I make the anastomosis at the lowest point on the posterior surface of the stomach directly through the mesocolon, and start the tear to the posterior surface of the stomach. For a long time I made the anterior gastroenterostomy at the lowest point directly along the edge of the gastroepiploic vessels, leaving a loop of about 16 inches of jejunum."

Deaver: "With jejunum, 10 to 12 inches from its commencement (lower part posterior stomach wall)."

Park: "I prefer the posterior operation, although it is a little more difficult and time-consuming, because it seems to give better drainage and for obvious reasons. Of course, in the presence of indications to the contrary, I should make anterior operation, but only when the posterior did not seem practicable."

Fig. 3.—1. Gastrojejunal anastomosis and opening. 2. Pylorus Stomach. 6. Posterior attachment transverse mesocolon. 7. Jejunum below anastomosis.

2. Do you eliminate the loop, and how near the duodenojejunal junction do you make the attachment?

Robson: (1) I leave no loop of jejunum, but (2) make the attachment as near to the duodenojejunal junction as I conveniently can."

Moynihan: "Yes, entirely. Opening begins about 2½ inches below the flexure."

Von Mikulicz: "In anterior anticolic gastroenterostomy, about 50 cm. from the plica duodenojejunal junction is selected to make the anastomosis. It is made this length in order to avoid the compression of the transverse colon. By the posterior retrocolic method, the loop is made as short as possible so that no tension exists."

Kicher: "I used to make it as near as possible to the duodeno-jejunal junction a certain time, but found it less convenient than the older method to put it at a certain distance, that is to say, 30 or 40 centimeters."

Czerny: "I have no loop of intestine, because I take the jejunum only so far behind the plica that it goes straight to the opening in the posterior face of the stomach near (1 or 2 cm.) the large curvature."

Mayo: "One and one-half inches (no loop)."

Murphy: "From 2 to 4 inches. I eliminate the loop entirely. The origin of the jejunum is above the level of the lesser curvature of the stomach."

Ochsner: "In gastroenterostomy for non-malignant conditions I make a loop of about six to eight inches from the duodenojejunal junction to the anastomosis. I do not eliminate the loop in these cases. In gastrectomy, if I have to remove more than two-thirds of the stomach, I always eliminate the loop by making an enterostomy in the following manner: I sever the jejunum about eight inches from the point where it passes through the mesocolon, and attach the distal end to the stomach and make a lateral implantation of the proximal end into the distal, about four or five inches from the point of the implantation of the latter into the stomach."

Deaver: "The anastomosis is made 10 to 12 inches below the jejunal flexure, giving a loop."

Park: "I endeavor to make the opening as near as possible to the pylorus in order to leave a minimum of loop, and to this I rarely pay any further attention. If the stomach be very much dilated or enlarged this may not be practicable, yet even then I have not paid much attention to the matter of loop."

3. If you have a loop, do you ever make an enteroanastomosis?

Robson: "In my early cases, when some loop was left, I have had to make an enteroanastomosis on one or two occasions, but these were only in anterior gastroenterostomies, except once, when there was intestinal obstruction, a few months after the operation, owing to adhesions between the distal loop of the jejunum and the colon."

Moynihan: "Have no loop, and therefore make no enteroanastomosis."

Von Mikulicz: "In cases where the gastroenterostomy is done with the suture in front of the colon, we add to it the enteroanastomosis. Where made with the button, this is usually not done, as the vicious circle does not usually occur in this method. If by the posterior gastroenterostomy a long loop must be made, the enteroanastomosis is also made."

Kocher: "No."

Czerny: "Never. Some years ago when I did not avoid so strongly the loop I was necessitated to make sometimes the enteroanastomosis secondary."

Mayo: "Abandoned."

Murphy: "I make no loop, nor have I done so for about three years."

Ochsner: "I have in a number of cases made an enteroanastomosis, but of late I have abandoned this plan and have substituted the implantation of the proximal end into the side of the distal segment. This is done where I do a partial gastrectomy."

Deaver: "Always."

Park: "I have not been in the habit of making enteroanastomosis, not having been able to convince myself that the conditions were materially improved by making it."

4. If you have a loop, do you ever close or divide the proximal limb, or the pylorus?

Robson: "I have never found it necessary to close the pylorus, and only twice performed a Raux operation—once where there were extensive adhesions, and where there was a jejunal ulcer. Both cases were anterior gastroenterostomies."

Moynihan: "No."

Von Mikulicz: "No."

Kocher: "No."

Czerny: "I have no loop, and therefore closure of the pylorus or enteroanastomosis is not necessary."

Mayo: "Abandoned."

Murphy: "I make no loop."

Ochsner: "At the present time I do not close the pylorus, nor do I close the proximal limb."

Deaver: "I have closed the pylorus in two cases; good results."

Park: "No."

5. How long is the incision, and in what direction do you incise the stomach and intestines, and do you remove any of the underlying mucous coat?

Robson: "I make an incision into the stomach parallel with the lower border. The oblique incision is quite unnecessary. The intestinal incision is longitudinal. About two inches is the usual length of the visceral incision. I do not remove mucous membrane of the stomach or jejunum, as a rule. I think the stomach will drain as well if the incision be made parallel with the lower border as by the oblique incision. The great secret is to attach the bowel correctly with the least possible manipulation and the least interruption to continuity."

Moynihan: "Oblique in stomach, longitudinal in intestine, opening at least 2 inches in length, nearly always more. Removal of mucosa was first adopted by me (see 'Diseases of Stomach,' edition 1, p. 273). It was suggested to me by the 'stamping out' of the Murphy button."

Von Mikulicz: "The cut is usually made in the stomach and bowel in a longitudinal direction, and is from 3½ to 4½ cm. long. The underlying mucous coat is not cut out."

Kocher: "I make a transverse incision in the intestine, half circumference, and for the stomach a longitudinal incision of corresponding length."

Czerny: "Only 2 or 3 cm. so long as to introduce the button. For the button it is equal if the incision is made longitudinally or transversely. For the suture I prefer a longitudinal incision 4 to 5 cm."

Mayo: "Two and one-half to 3 inches, oblique above down left to right, and always go to bottom stomach and a little on to the anterior surface below."

Murphy: "I make the incision long enough to admit of the insertion of an oblong button, which is about five-eighths of an inch. I do not remove the mucosa, as I feel that the pressure from the button assures one against hemorrhage from the cut mucous membrane, which is an important factor, as this has caused more than one death."

Ochsner: "At the present time I use the McGraw ligature, making the bite of this 7.5 cm. in length. This causes the mucous coat to become necrotic, which corresponds to cutting it away. In resection of the stomach I make an implantation of the distal segment of the jejunum, and an end-to-side anastomosis."

Deaver: "Usually make incision three inches in long axis of stomach, and remove the projecting mucous membrane flush with the serous and muscular coats."

Park: "I make the opening some 3 inches in length and remove quite a strip of mucosa. The incision in the bowel is, of course, longitudinal; that in the stomach I place, so far as I can, between large vessels, although not hesitating to make this parallel with the greater curvature and cross the vessels when it seems easier, quicker or more adapted for the purpose."

6. Do you use the button or the suture?

Robson: "I employ two continuous sutures: (1) mucous, (2) serous, usually around a decalcified bone bobbin, that dissolves under forty-eight hours. I sometimes omit the bobbin, but my results with it have been so satisfactory, and the recoveries so smooth that I think the immediately patent opening is of service, and enables feeding to take place immediately. I do not use the metal button."

Moynihan: "The suture always. It is almost as speedy—the suture line never yields—the button does. The opening by suture can be made any size, proportioned to size of stomach. The operation when completed leaves nothing behind to cause further disaster. With regard to time, I have recently completed a gastroenterostomy from incision to final suture in abdominal wall in exactly fifteen minutes in a desperate case."

Von Mikulicz: "We believe the thread is the ideal and safest way, but often, on account of the poor condition of the patient, and in cases of cancer where the question of time (an operation of 10 minutes) is of great importance, we usually use the button. In favorable instances, the suture." (Compare this answer with the previous questions.)

Kocher: "Suture, as a rule; button more frequently these last months, because it is so simple."

Czerny: "I use the Murphy button; very seldom the suture, because the operation is much quicker, the danger of infecting the peritoneum from the contents of the intestines less. But I agree that the button will not remain the best method, because it passes sometimes, about 5 per cent., in the stomach, and the passage through the intestine is sometimes difficult, and the anastomosis properly in the thickened hypertrophied stomach is too narrow."

(Czerny usually puts a ring of sutures around the button to give additional protection.—W. H. W.)

Mayo: "Suture, button goes into stomach."

Murphy: "I use the button all the time, because I believe it gives the best scar. There is less likelihood of leakage when properly made and properly inserted, and the oblong button has not been retained in the stomach in a single instance."

Ochsner: "I use a needle and thread, because in two cases the button tore out and I had a fatal result, while in using the needle and thread I have not had this difficulty."

Deaver: "Always needle and thread for the gastroenterostomy; the button for enteroenterostomy. Never use clamps."

Park: "I have so far always used sutures, believing that I can do better work with them, even though a little more time is consumed."

7. Do you have a vicious circle or regurgitant vomiting?

Robson: "No."

Moynihan: "At first I did. I re-operated twice in my first fifty cases. Now never occurs. Patients vomit less after gastroenterostomy than after any admonial operation, probably because in efforts of vomiting the new opening affords the easiest escape from stomach. Patients should be propped up in bed as soon as they are aroused from the anesthetic. Five pillows or bed-rest. This is a point I have always emphasized and have adopted for over five years. It helps to keep stomach and jejunum in their proper relative position."

Von Mikulicz: "In the last few years we have seldom had the vicious circle in using either the button or the suture, since we added to the gastroenterostomy the enteroanastomosis. In spite of this fact, we had in the last year two cases of vicious circle—one by the anterior gastroenterostomy with the button, and the second time by the posterior operation with the loop."

Kocher: "As a great exception in nervous people, and in cases where the indication was not absolute, have had regurgitant vomiting."

Czerny: "Never, or nearly never. Vomiting has been stopped by one or two introductions of stomach tube."

Mayo: "No, unless we have a loop."

Murphy: "I have only had one case of vicious circle. I have had two cases of regurgitant vomiting."

Ochsner: "Since choosing the lowest portion of the stomach, I have had no vicious circle or regurgitant vomiting. When I made the enterogastroenterostomy without choosing the lowest point of the stomach, I frequently had this trouble."

Deaver: "No."

Park: "I have so far had no evidences of vicious circle or regurgitant vomiting, although, as I have remarked above, I rarely, if ever, do anything but the simple gastroenterostomy."

8. Have your ultimate results been good?

Robson: "Yes."

Moynihan: "Yes; I have had but six unsatisfactory cases in approximately 180 cases."

Von Mikulicz: "As far as the functional results and the length of life after the operation are concerned, compare the work of W. Kausch on functional results after operations on the stomach in favorable cases. Extracts from an article in the *Journal of Medicine and Surgery*, vol. iv, 1899. Chumsky —Additional observations on gastroenterostomy in the *Journal of Clinical Surgery*."

Kocher: "Very good."

Czerny: "Very good (Vide Pedersen, 215 gastroenterosto-

mies with 5 per cent. mortality from all causes in benign cases, with no serious vomiting and no obstruction)."

Mayo: "Yes."

Murphy: "The ultimate results have been good. I feel that sufficient attention has not been paid to the direction of diet immediately after the gastroenterostomy."

Ochsner: 'My ultimate results have been satisfactory so far as I have been able to review my cases, but I have been compelled to reoperate in about 4 per cent. of my cases."

Deaver: "Yes."

Park: "Excellent."

9. Have you had closure of the gastrojejunal opening?

Robson: "No."

Moynihan: "No. I have reopened abdomen about four times for other conditions, and opening has always been patent, even when pylorus is open. Closure of opening is due, I think, to improper technic. It is avoided by large opening, removal of mucosa and through-and-through suture, securing apposition of mucosal edge."

Von Mikulicz: "No."

Kocher: "No."

Czerny: "I guess one or two times in postmortem for cancer cases, or in cases where the functional use of the anastomosis has been of little importance. (Vide Pedersen.))"

Mayo: "Yes."

Murphy: "No."

Ochsner: "After using the Murphy button, I had a number of cases in which the gastrojejunic opening closed down to less than one-half cm. Since using the McGraw ligature I have not had this experience."

Deaver: "No."

Park: "Not to my knowledge, although one of my old cases has just come under my observation in which it is possible that the opening has become contracted."

10. What has been your mortality, both past and recent?

Robson: "My total mortality in posterior gastroenterostomy (close on 200) including both malignant and simple cases, the latter including hour-glass stomach and acute gastritis, has been 4 per cent. In my private practice there were 77 simple cases with two deaths, 2.62 per cent., one patient operated on for acute gastritis and incessant vomiting. There was no vomiting after operation and the wound healed, but the patient died subsequently of exhaustion; and one operated on at a distance, and after attention conducted by an inexperienced practitioner who starved patient, previously exhausted. Death occurred from asthenia in two weeks. There were 15 cancer cases, with one death. Total, 92 cases, 3 deaths, 3.2 per cent."

Moynihan: "Including cases just left hospital, 191 cases, 5 deaths, 2.63 per cent. In these were three deaths in 27 patients operated on for hemorrhage, when the patient's condition was somewhat desperate."

Von Mikulicz: "Of 210 patients operated on for carcinoma of the stomach in the years 1890 to 1904, 69 died—that would be a mortality of 32.85 per cent. In the favorable cases from 1891 to 1897, the mortality was 16.2 per cent. In the operative cases from 1897 to 1899, 23 patients were operated on, one died; mortality 4.35 per cent. The statistics of the patients operated on in the last years have not been compiled."

Kocher: "I am now gathering all my cases, so I can not at this moment give you my exact results. I might in October. The earlier results are given in my text-book, 1903 (100 cases, 3 deaths, neither referable to the operation, but to the disease itself)."

Czerny: "Vide No. 8."

Mayo: "Over 400; past, 6 per cent.; present, less than 3 per cent. in 150 cases. Have recently made 53 gastroenterostomies in succession without a death."

Murphy: "Last year one death. I have not gone over my cases recently, and am not in a position to do so at present."

Ochsner: "The mortality in cases in which the operation was performed for relief of pyloric obstruction due to malignant growths has depended largely on the condition of the patient at the time of the operation. It is approximately 12 per cent. In non-malignant cases it is approximately 4 per cent. I have performed the operation 143 times."

Deaver: "This I can not answer off hand; would require my going over all records. I have never lost but one case of gastroenterostomy out of a large number for benign condition. The mortality in malignant cases has been about 10 per cent."

Park: "I have had about 25 cases. The number may be a little larger or a little smaller; I have not time to look over my records. Among these cases there have been two deaths. I have not heard of the death of any patient since the operation who survived the procedure itself."

11. Have you ever had the anastomosis become detached after using suture or button?

Robson: "Yes, after using the Murphy button in anterior gastroenterostomy; never in the posterior operation."

Moynihan: "Have only used button in early cases, about six. Suture line has never given any trouble."

Von Mikulicz: "A complete parting never. Partial insufficiency in rare cases has occurred both with the suture and the button."

Kocher: "No."

Czerny: "As much as I remember, never, but in few cases the postmortem showed an infection by secondary necrotic dehiscence of the adhesions."

Mayo: "Yes; button must be protected by a few sutures if used."

Murphy: "No."

Ochsner: "The anastomosis in my experience has never been detached in using the McGraw ligature, but it has become detached twice in using the button."

Deaver: "No."

Park: "I have not had any detachment of anastomosis myself, but have seen one or two cases where it has occurred with the button in the practice of others."

12. Do you believe that the passage of bile and pancreatic secretion into the stomach causes regurgitant vomiting?

Robson: "No, if the passage out of the stomach is free and the intestine is not obstructed."

Moynihan: "No. In one case of mine, all bile and pancreatic juice passed into the stomach for weeks and no vomiting ensued. See *Brit. Med. Jour.*, May, 1901."

Von Mikulicz: "No."

Kocher: "Yes, in nervous people."

Czerny: "The anastomosis causes sometimes (in very rare cases) a bitter sensation of bile in the morning, which causes nausea. About regurgitation I have no experience."

Mayo: "Yes."

Murphy: "I think it might, but I doubt if it does."

Ochsner: "I believe that regurgitant vomiting is caused by the fact that in some cases the opening in the stomach is not at the lowest point, and that in this way bile and pancreatic fluid will run into the stomach and can be evacuated into the jejunum only with difficulty. In the other cases, the attachment of the jejunum to the stomach may be such as to make the passage of bile and pancreatic juice easier into the stomach than into the lumen, because of angulation or narrowing of the lumen or obstruction due to some form of torsion."

Deaver: "Yes."

Park: "I have no good reason for thinking so, at least from my own experience."

CONCLUSIONS.

1. Some cases of acute and subacute gastric and duodenal ulcer, and many cases of chronic and duodenal ulcer, should be treated by efficient stomach drainage into the duodenum or jejunum.

2. Drainage by pyloric divulsion, and by pyloroplasty with its modifications, has not been successful, and these methods are now practically obsolete.

3. Gastroduodenostomy as modified by Kocher and Finney, may give efficient drainage in many cases, but

it should be limited to such patients as can not be operated on by a posterior retrocolic gastroenterostomy with the anastomosis near the duodenojejunal flexure.

4. Anterior anticolic gastroenterostomy should not be an operation of election, but an operation of expediency and necessity, to give temporary relief, or to meet special abnormal conditions that may contraindicate the posterior attachment.

5. The ideal operation of election must be the posterior retrocolic attachment near the beginning of the jejunum, and at the bottom of the stomach in the pyloric end, thus eliminating the loop.

6. This gives the most efficient drainage, prevents the vicious circle and regurgitant vomiting, leaves stomach and intestine in nearly normal relation, and is followed by better immediate and ultimate results.

7. The intestinal incision should be made longitudinally and not less than two inches long, and the stomach incision of corresponding length, preferably in the oblique direction. An elliptical strip of mucosa should be excised from both stomach and intestinal incision.

8. The anastomosis is best made with a continuous suture (Pagenstecher or silk) using a full curved round-pointed needle. The suture should be applied in double layers, the inner to include all the visceral layers, and unite the cut edges of the opening; the outer, one-fifth inch away, to include the serous and sub-serous layers.

9. Enteroenterostomy, or closure by suture constriction or resection of the proximal jejunum or the pylorus is contraindicated. It commits an unnecessary traumatism and leaves a deformity that may cause immediate and subsequent bad results.

THE SURGICAL IMPORTANCE OF THE CERVICAL RIB.

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While the supernumerary ribs of the lumbar vertebræ possess an academic interest only, the accessory rib of the cervical portion of the spinal column commands practical importance. Literature does not contain a single case in which the lumbar rib has caused any discomfort whatsoever. In contrast hereto the observations concerning more or less great disturbances, due to cervical rib, are multiplying with each year. The Roentgen ray has enabled us to obtain more accurate anatomic knowledge of this region and has also given us a means to determine the accuracy of surgical procedures. We have learned to use the Roentgen picture as a reliable guide in outlining the plan of operation.

Naturally it was the anatomists who gave us the etiology at a period when we did not as yet value the clinical importance of the cervical rib. As the pioneer in this direction we may consider Hunauld.[1] Later, Gruber was able to demonstrate 76 cases on 45 bodies, and 2 in the living.

Pilling[2] mentions 129 cases, but these were mostly all observed in the dead body.

Gruber differentiated the different grades of the anomaly according to their several stages of development. On the basis of his viewpoint we may divide the different types as follows: (*a*) Slight degree: The cervical rib reaches beyond the transverse process. (*b*) More advanced: The cervical rib reaches beyond the transverse process, either with a free end or touching the first rib. (*c*) Almost complete: The connection between the cartilage of the first rib is formed either by means of a distinct band or by the end of its long body. (*d*) Complete: It has become a true rib and possesses a true cartilage, which unites with the cartilage of the first rib.

In general, we can assume that the cervical rib is double in 67 per cent., and single in only 33 per cent. of all cases. A completely developed cervical rib on both sides is to be regarded as rare. One such case is described in the monograph of Pilling.

An additional rib which runs from the sixth cervical vertebra is to be regarded as a very rare condition. With the exception of the case to be described, I have found this anomaly observed twice only in literature.

It is significant for the difficulties of the diagnosis that naturally presented themselves before the Roentgen era, that by far the most of the reports speak of accidental discovery at autopsy. Consequently, if no marked disturbance was caused, the possessor of the cervical rib undoubtedly took his "special marks of identification" with him, unknown, to his grave.

Although this anomaly is of congenital origin, the complaint does not make itself felt until about the twentieth year, a fact which is hard to explain.

From most reports, we learn that by far the greater number of patients had passed the age of twenty years—a few patients had even reached the age of 55 years. In a number of cases, it was possible to refer to trauma as a precursor of the complaint, in others the presence of constitutional diseases such as anemia, chlorosis, rheumatism, scrofula or even tuberculosis was observed.

Whether the loss of fat causing a diminution of padding in these diseases is the reason for the greater manifestation of the discomfort, must remain to be seen. At any rate, special circumstances, the nature of which is still unknown to us, must form important factors in the maturing of the disease; besides, it is to be assumed that the tissues adapt themselves to the rib during the period of development, and that no discomfort arises where a certain amount of elasticity or of a yielding tendency exists; thus the age of the patient is valueless from a diagnostic point of view.

Before the Roentgen era, it might have been thought that in cases of symptoms referable to this region the possibility of some such anomaly might have been considered, but in most cases, other conditions, especially tumors of all kinds, were thought of rather than cervical rib.

Tilmann,[3] who has gained special credit in the investigation of these cases, could collect only 26 cases among the living, and of these one-half were discovered accidentally. There can not be the least doubt that the actual number of cases is by far a much greater one. In the future this will have to be proved by the Roentgen rays.

This difficulty of diagnosis is brought forward in the splendid monograph of Kammerer,[4] a treatise which deserves recognition and imitation for its brave self-criticism. Although in his case, the possibility of a cervical rib as the cause of the swelling had been thought of, the natural tendency seemed to be to con-

1. Sur le nombre des côtes moindres ou plus grands qu' à l'ordinaire, Mém. de l'Académie Royale des Sciences de Paris, 1743.
2. Ueber die Halsrippen des Menschen, Inaug. Dis., Rostock, 1894.
3. Deutsche Zeits. f. Chir., vol. xli.
4. Annals of Surg., November, 1901.

sider it as an exostosis. The pressure symptoms disappeared in this case after removal of the rib.

The principal symptoms of the anomaly are the hump-like prominence in the lateral cervical region, the superficial pulsation of the subclavian artery and the appearance of pressure symptoms in the brachial plexus.

Prickling and lancinating pains in the arm, general loss of flesh and especially atrophy of the muscles supplied by the median nerve, numbness and diminished compressive power of the hand of the affected side, a feeling of cold, and pains in the neck on stretching it have also been observed. At times it goes so far as to form an aneurism of the subclavian artery.[5]

A striking fact is that even after a diagnosis has been made the attempt is often made to master the trouble by internal means. But as soon as the physician becomes familiar with the anatomy of the cervical rib, he must acknowledge that he has to deal with a disturbance placed in the way of the normal blood and nerve paths, which has attained the prowess of a foreign body. Thus the treatment for the difficulties arising therefrom can only be a mechanical one, i. e., surgical, massage, electricity, hot and cold packing, etc., can be of only temporary benefit and possess the disadvantage

Figure 1.

that much valuable time is wasted. Thus the disturbance may become permanent.

A radical cure can be effected only by the removal of the cause of pressure, that is of the rib itself.

It is just as foolish to remove a cervical rib which causes no disturbance as it is to leave one that does until lasting tissue changes have been brought about. The operative measure, if timely, removes all discomfort at once.

At times the technic for the removal of the rib is very simple. In the majority of cases, however, one encounters difficulties, and, therefore, the operation should be done only by an experienced surgeon. The difficulty of the removal is magnified by the fact that it is necessary to remove the periosteum with the rib, for if the much easier subperiosteal removal is undertaken a recurrence due to the regeneration of the bone must be expected.

The field of operation grazes the lower two cervical nerves, the upper dorsal nerve and the lower cervical ganglion of the sympathetic. Furthermore, it touches on the large vessels and on the pleura, the latter being especially thin here and very easily wounded. Of course the adhesions formed between the parietal and visceral pleura in most of these cases give a certain amount of protection against the development of a pneumothorax, if an injury be caused. In a case of Planet[6] it seems to have been impossible to avoid injuring the pleura, so that a pneumothorax was caused, but without any grave disturbance.

The extirpation of small rudiments whose ends do not reach the subclavian artery, is naturally simple. When we have to deal with a fully developed rib the various steps of the operation must be so carried out that the artery is avoided from the beginning.

Some operators place their incision along the posterior border of the sternomastoid, while others advise a longitudinal incision between the trapezius and the jugular vein.

I find that a triangular flap incision, running directly downward along the trapezius and then conducted toward the sternum about one inch above the clavicle, fully exposes the field of operation. If the trapezius can not be sufficiently retracted with broad retractors, a transverse incision must be made into the muscle, for next to a strict asepsis the success of the operation depends on extensive exposure of the field of operation.

The brachial plexus, which usually runs across the rib, can also be pushed aside. The subclavian artery is

Figure 2.

best pulled forward. The scaleni are carefully divided at their point of insertion, and this is best done by using a Cooper shears and, advancing layer by layer, lifting the several muscle fibers with the flat of the scissors and using the instrument as one would use a grooved director. By means of a ring-shaped periosteotome the rib is then freed of any small muscular appendages. The division can easily be accomplished by means of my beak-shaped rib-shears. Some prefer the Gigli saw. Any remains are nipped off with the rongeur forceps.

The following case is of interest from several points of view.

Patient.—A young woman, aged 21, delicate, anemic and of small stature.

Family History.—Both parents are alive. The mother is also small and delicate, but well. As a child she lost an eye through trauma. Father has suffered from interstitial nephritis during the last few years.

History.—The patient had measles and scarlet fever when a child. One year ago, after a fall, she began to suffer with pain in the right side of the neck. This was regarded and treated as rheumatic. Two months later the pains began to extend into the arm and were accompanied by prickling and numbness of the fingers. She was then treated in the department for nervous diseases of the German Poliklinik and re-

5. Wiltshire, Lancet, p. 633, London, 1860, and Boyd, Internat. Med. Mag., 1893.

6. Tumeurs osseuses du cou, Thèse de Paris, 1890.

ferred from there to me. My assistant, Dr. Heckmann, diagnosticated a slight bulging of the right side of the neck and a corresponding osseous tumor which could be traced from the spinal column to the neighborhood of the sternoclavicular joint. Pulsation was marked. After Dr. Heckmann had confirmed his diagnosis of accessory cervical rib by means of the Roentgen plate (Fig. 1) he exposed the anterior portion of the rib by means of an incision running along the posterior border of the sternomastoid muscle. He found both the brachial plexus and the subclavian artery passing over it. After the resection of this portion the plexus as well as the artery dropped back into the newly formed cavity. As the cause of the pressure had been removed it was decided to let the posterior remnant of the rib take care of itself. The symptoms of complaint gradually disappeared, but returned with undiminished vehemence three months later.

Examination.—When I examined the patient I could find neither prominence nor pulsation. The pulse of the axillary, brachial and radical arteries, however, was diminished in tension. The reaction to electricty of muscles and nerves was also diminished. Sensation was normal. Patient was extremely anemic and complained of pains in the neck and right arm and of numbness of the fingers. On stretching the neck the pains were intensified. The power of compression of the right hand was diminished.

The Roentgen picture—extreme lateral position of head during exposure—(Fig. 2) shows on the right side the presence of a fair-sized costal stump running from the seventh cervical vertebra, while the left side shows a small rudiment. The sixth cervical vertebra shows a rudiment on both sides.

Operation.—In view of the vehemence of the symptoms, especially of the pains, I decided to reopen the field of operation for the purpose of removing the remainder of the rib. Advancing carefully, layer by layer, into the deeper tissues, I neither came in contact with the brachial plexus nor with the artery. It was rather difficult to separate the muscle from the edges of the rib. Most of the separating was done bluntly with the aid of the Cooper scissors, using them as a support. The extirpated fragment of the rib measured 4 cm. As the previous resection had been done subperiosteally a new formation of bone of more than one cm. in length had attached itself to the stump of the rib. Hence it becomes evident how necessary it is always to remove the periosteum with the rib. The rib, on the whole, was narrow, thickened at its vertebral attachment and presented a small groove on either side.

Recovery was uneventful. The symptoms disappeared entirely shortly after the operation. Two months later slight symptoms of pain made themselves felt in the neck on the right side, but these also disappeared after the use of the galvanic current.

BLOODLESS REPOSITION OF THE CONGENITALLY DISLOCATED HIP JOINT VERSUS ARTHROTOMY.

WITH STATISTICS OF 34 CASES OPERATED ON BY DR. LORENZ DURING HIS VISIT TO THE UNITED STATES IN 1902.

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A dispute which appears to be settled, at least so far as the competent authorities in Germany, France and Italy are concerned, seems to have been resurrected in America in recent days. The question is whether the open operation or the bloodless reposition of the congenital dislocation of the hip joint should dominate the future therapy of this deformity.

One of Sherman's later publications[1] is so much in favor of the open operation that it seems quite justifiable to compare these methods of treatment critically without any prejudice.

In this connection I quote the historical fact that the originator of the bloodless method, Prof. A. Lorenz of Vienna, had the largest record (about 200 cases) of open operations just at the very time when he began to develop the bloodless method, which he considers the only and the most suitable treatment. Prof. A. Hoffa of Berlin, whom we may call the most prominent pioneer in the development of the open method, recommends in all cases at first the attempt to reduce the congenitally dislocated hip, leaving for the open operations only those cases in which the bloodless method failed.

Among American surgeons it must be admitted that some uncertainty about the advisability of the new method has developed, because of the many accidents which have been observed; but to be just we must frankly state that for those accidents and mischief the method can not be held responsible. They occurred mostly in unsuitable cases and were due to rough maneuvers or to other mistakes in technic.

The great importance of the first mentioned point may readily be seen in the many cases scattered between Boston and San Francisco on which Lorenz operated. Not half of those cases were pronounced by Lorenz as favorable, either because of the advanced age of the patients or because they had been operated on before without success either by arthrotomy or by reposition. Knowing how small a chance for success he would have, and emphasizing this fact, he nevertheless was obliged to operate on these patients, as these cases were often the only ones which could be secured for his clinical work.

In a great many cases his refusal to operate would have resulted in great disappointment to many physicians and students who wished to witness the single steps of the operation. In one large eastern city with a population of nearly a million, not a single half-way suitable case was among those that were prepared for him; he was not loath to cancel the clinic altogether, and only the consideration of the crowded amphitheater, as well as regard for his host, induced him to do his best in spite of the very unfavorable circumstances.

That under these conditions the method could not show its best results and could not be expected to give the claimed 50 per cent. of anatomic cures is an evident matter of fact.

The few cases which Lorenz pronounced favorable could not give the best results possible, as the very important after-treatment was administered by the various surgeons under whose care the patients were left in various ways and after different principles. This fact, although deplorable, was unavoidable, as with the exception of the few pages which Lorenz[2] devoted to this chapter in his book nothing existed dealing with these very important features of the treatment. Many new details have been added to this chapter, and simple comparison of the after-treatment as outlined by Lorenz in his book in 1900, and given by me in 1904 and 1905,[3] shows this fact very clearly. Those details explain why the majority of the cases operated on by Lorenz can not be regarded as giving average results or as being

1. Sherman: Congenital Dislocation of the Hip. THE JOURNAL A. M. A., Jan. 7, 1905.

2. Lorenz: Ueber die Heilung der angeborenen Hüftgelenksverrenkung durch unblutige Einrenkung. Wien, 1900.

3. Mueller and Ashley: Treatment Following the Bloodless Reduction of Congenital Hip Dislocation. New York Medical Journal. A series of four articles, beginning May, 1904, ending January, 1905.

fitted for drawing figures for statistics. That among Lorenz' cases, however, a good many first-class results have been secured I am able to prove by the following statistics:

Total number of cases operated on by A. Lorenz and left under my care, 34.

Cases suitable for statistics, 32.

Anatomic repositions, 21 (Table A).

Subspinal positions, with excellent functional result, 11 (Tables A, B and C).

TABLE A—ANATOMIC RESULTS.

No.	Name.	Age in Years.	Side.	Date of Operation.	Gait. (1905)	Motion. (1905)	Notes.
1	L. Th.	3½	L.	Oct. 18, 1902.	Normal.	Full.	February 19, 1903, depression of the head, which stood in suprapubical position.
2-3	B. M.	4	L. & R.	Nov. 24, 1902.	Normal.	Full.	April 25, 1903, removal of the cast; after-treatment.
4-5	E. L.	4	L. & R.	Oct. 24, 1902.	Normal.	Full.	June 24, 1903, depression (as in Case No. 1). August 29, 1903, third cast; February 5, 1904, after treatment.
6	M. W.	4½	L.	Oct. 18, 1902.	Good.	Full.	April 20, 1903, after-treatment; Feb. 15, '05, some outward rotation still exists.
F	B. E.	4½	L.	Oct. 15, 1902.	Stiff.	Limited.	March 15, 1904, forcible correction of the abducted position; parents discontinued treatment.
8	S. L.	4½	L.	Oct. 22, 1902.	Normal.	Full.	July 6, 1903, after-treatment.
9-10	K. B.	5	L. & R.	Oct. 16, 1902.	Good.	Limited on left side.	May 20, 1903, depression on the right side (as in Case No. 1).
11	L. R.	5	L.	Nov. 12, 1902.	Normal.	Full.	December 12, 1903, depression (as in Case No. 1).
12	D. A.	5½	L.	Oct. 22, 1902.	Normal.	Full.	Operated on without success by Dr. J. Ridlon, 3 years ago. April 23, 1903, after-treatment. August, '04, died from typhoid fever.
13	A. L.	6	R.	Oct. 10, 1902.	Somewhat stiff.	Somewhat limited	Operated on without success by Dr. J. Ridlon, 2 years ago. April 19, 1903, second cast. July 2, 1903, after-treatment.
14	W. M.	6½	L.	Oct. 17, 1902.	Normal.	Full.	April 18, 1903, after-treatment.
15	N. H.	7	L.	Oct. 24, 1902.	Good.	Full.	Operated on without success by Dr. J. Ridlon, 2 years ago. April 19, 1903, after-treatment leg somewhat rotated outwards.
16	L. E.	7½	L.	Oct. 12, 1902.	Normal.	Full.	Operated on without success by Dr. J. Ridlon, 3 years ago. May 29, 1903, depression (as in Case No. 1). August, 1903, after-treatment.
17	B. Ph.	8	L.	Oct. 16, 1902.	Normal.	Nearly full.	April 27, 1903, after-treatment.
18	E. S.	8½	L.	Oct. 12, 1902.	Normal.	Full.	May 18, 1903, depression (as in Case No. 1). August 18, 1903, after-treatment.
19	H. R.	8½	L.	Oct. 22, 1902.	Normal.	Full.	May 19, 1903, after-treatment.
20	L. T.	8½	L.	Oct. 18, 1902.	Stiff.	Limited.	January 14, 1904, and February 9, 1905, correction of the abducted position in narcosis.
21	K. M.	9½	L.	Nov. 2, 1902.	Normal.	Full.	June 8, 1903, after-treatment.

As the cases contained in Table C must be excluded, the proportion of the anatomic repositions to the subspinal positions stands 21 to 11. Although more than two years have elapsed since the time of the operations, the treatment of all cases can not be considered as finished. This is shown by Cases 7, 13 and 20 of Table A, where some stiffness and limitation of the motion of the hip joint is still present. Under suitable treatment all these cases are improving, so that for each one a perfect motion (continued care provided) may be predicted. Even in case we subtract for the present time Cases 7, 13 and 20 from the perfect anatomic cures, the proportion stands 18 to 14. That means about 50 per cent. of anatomic cures with absolutely normal gait.

Among the 21 anatomic results, depression of the head, which stood in a suprapubical position, was necessary in six cases. All cases thus treated gave beautiful results.

That many of the patients operated on unsuccessfully before are among these cases, and that many of them

TABLE B—SUBSPINAL POSITIONS.
ANTERIOR SUPERIOR REDISLOCATIONS.

No.	Name.	Age in Years.	Side.	Date of Operation.	Gait. (1905)	Motion. (1905)	Notes.
1	B. L.	3	R.	Oct. 16, 1902.	Good.	Full.	April 27, 1903, after-treatment.
2	T. H.	3	R.	Oct. 31, 1902.	Nearly normal.	Full.	June 5, 1903, after-treatment.
3	M. M.	3		Oct. 17, 1902.	Good.	Full.	April 18, 1903, after-treatment.
4	B. T.	3½	L.	Oct. 12, 1902.	Good.	Full.	May 15, 1903, after-treatment.
5	V. T.	4	L.	Oct. 21, 1902.	Good.	Full.	April 25, 1903, after-treatment.
6	L. M.	4	L.	Oct. 15, 1902.	Nearly normal.	Full.	April 18, 1903, after-treatment.
7-8	S. M.	6½	L. & R.	Nov. 22, 1902.	Good.	Full.	September 10, 1903, second cast; August 14, 1903, third cast; March 15, 1904, after-treatment.
9	L. G.	7	L.	Oct. 18, 1902.	Somewhat stiff.	Full.	April 29, 1903, after-treatment.
10	E. N.	5	L.	Oct. 29, 1902.			Although both children walked well the parents were determined to have the attempt made of changing the subspinal position into an anatomic position. In both cases the secondary operation was successful. Further particulars about this new improvement will be published later.
11	A. G.	5	L.	Oct. 18, 1902.			

TABLE C—MISCELLANEOUS CASES.

No.	Name.	Age in Years.	Side.	Date of Operation.	Gait. (1905)	Motion. (1905)	Notes.
1	G. E.	10	L.	Oct. 14, 1902.	.....	.....	During March 1903, a correction of the abducted position was made and a cast was applied by a Chicago surgeon; this manipulation probably led to a relapse. June 17, 1903, this cast was removed and a relapse was apparent.
2	E. McL.	4½	L.	Oct. 20, 1902.	.....	.....	June 18, 1903, removal of the case, depression of the head (as in Case No. 1) proposed, but declined by the parents.

were near or beyond the age limits can be seen from the statistics, but so much the more must we be satisfied with the fact that over 50 per cent. of anatomic results and no relapses have been obtained. The reported relapse in Case 1, Table C, is certainly due to the unsuitable maneuvers while the second cast was put on.

It can not be repeated often enough that in order to show the full efficiency of the bloodless method it is necessary to keep strictly within the age limits. It can not be expected that a method for which such limits exist will give the best results in cases which have passed this limit, although the operation itself, that is,

the reposition of the head of the femur into the socket, might be accomplished in a great many cases that are beyond that limit. The age limit—about 7 years for unilateral cases, and 4 or 5 years for bilateral cases—are too well known to need further discussion. Within these limits it must be considered a great rarity when the bloodless manipulations do not give the wished-for reposition; but such exceptions occur. Sherman's case of the 10-month-old baby in which he found the entrance to the cavity of the socket exceedingly narrow, may belong to this group; I had a similar experience four months ago in a case of a double dislocation—a girl of 3 years—in which I secured an anatomic result on the left side and two attempts to reduce the right side failed, although each attempt lasted more than one and one-half hours. Other orthopedic surgeons undoubtedly will have similar experiences.

The obstacle in such cases is the narrowed part of the capsule, which in some publications is called the "hourglass-shaped constriction of the capsule" (*Sanduhrförmige Einschnürung der Kapsel*), and in others, "the entrance to the pocket-shaped recessus of the socket" (*Eingang zur Pfannentasche*).

It always has been evident for every one who ever performed or witnessed an arthrotomy, or an open reposition, that a disproportion exists between the head of the dislocated femur and this narrowed part of the capsule, through which the head has to be introduced into the socket. All authors are familiar with this fact. This narrowed space, however, within the age limits of the bloodless operation with the exception of a very few cases, is always large enough to allow the passing of the head of the dislocated femur. That this passage is not always easily accomplished can be readily understood; usually some difficulties are met with in executing the reduction; the narrowed capsule must be widened according to the diameter of the femur head.

If we open a joint we can not tell from the appearance of the narrowed part of the capsule whether a reposition by mere maneuvers would be impossible. Sherman[1] in his paper, however, avails himself of this kind of argument and in discussing his 28 cases comes to the conclusion that among 28 impossibilities there was only one possibility for getting a real reposition by the bloodless method. Of course, no one is able to prove such a statement, not even Sherman himself.

The same objection to the bloodless method was made in Europe at the time the first communications about it were brought forth. All these voices were silenced after it was proved that the impossibilities were lost sight of in the overwhelming number of possibilities. When Sherman's paper was discussed at the meeting of the American Orthopedic Association, Atlantic City, June, 1904, as far as I remember Sherman's standpoint was not supported in the general sense. An eminent guest of the association, Professor Hoffa of Berlin, who, like Lorenz, performed several hundreds of open and bloodless operations and who is a pronounced partisan of the open method, did not consent to Sherman's accounts, and preferred not to answer when Sherman asked him whether he really believed the possibility of driving the camel (the head of the femur) through the needle's eye (the narrowed part of the capsule). Each surgeon who has performed a bloodless reposition may answer this question for himself.

The possibility of the immediate success of the operation, which means the fact of the introduction of the head into the socket is the same, whatever method may be resorted to; but for the criticism of a method not only the immediate success of the anatomic result but also the permanency and the quality of the functional result comes into consideration and it must be emphasized that anatomic and functional results do not always correspond.

My connection with Prof. A. Lorenz in Vienna enabled me to form an opinion regarding the results of the two routine treatments, as in 1897, when I began to work with Lorenz, the open operation was still very often practiced by him in older cases, whereas, on the other hand, all those patients who have been operated on by Lorenz by the open operation previous to that time used to come regularly either for after-treatment or for an examination.

I was able to trace more than 200 cases of open operations in their results for a long time—some for several years. This gave me the opportunity to compare their results by interposition with the results obtained by the bloodless method.

The exact requirements of a perfect anatomic result are not always obtainable by performing the open operation. There are many cases in which the head does not stand centrally opposite the V-shaped cartilage, a sort of new socket being devolved above or in the back of this place. The functional result, however, is not altered by this fact, provided that it finds a stable position in its new place.

A much more important point is whether or not an ankylosis or restriction of motion in the joint operated on follows. Very often the success of the nicest anatomic reposition is annihilated or at least greatly interfered with by the presence of a total or partial ankylosis. This always threatens to develop when the children operated on are over 4 years of age. A sure exclusion of this disagreeable accident can never be warranted, however, not even in cases in which the children are operated on at a very tender age, say 2 or 3 years old, although the chance for a prospective ankylosis is greatly diminished.

Patients who suffer from a single dislocation only in cases of ankylosis may sometimes obtain, but not always, a half way good functional result so far as walking is concerned. Only after a long and tedious after-treatment of massage and gymnastics is it possible to teach them how to execute the motions of the thigh. In these favorable cases, too, a constant care and supervision and a continued after-treatment for years is necessary in order to overcome the tendency of contracture, which, if overlooked, flexes and adducts the thigh, thus causing in neglected cases formidable secondary shortenings.

For children operated on on both sides, the establishment of an ankylosis always proved disastrous. I know of 6 or 7 cases among the 240 open operations of Lorenz in which neither mobilizations under anesthesia nor secondary surgical interferences like resection of the head, nor gymnastic and passive motions, even when continued for years, were able to give any relief. Such patients are by far worse off with their double ankylosis after the operation than before, although the *x*-ray picture in some of the cases belonging to this group showed perfect anatomic replacement on both sides.

I wish to state these facts before going into a detailed discussion of the advisability of both methods. I think they explain clearly why the two orthopedic surgeons, Hoffa and Lorenz, who have the greatest ex-

perience with the various open operations, are righteously prepossessed in favor of the bloodless method.

The main objections which are made to the bloodless method by the partisans of the open operation are principally the impossibility of reducing the dislocated hip in all cases by bloodless manipulations; the dangers involved, such as hematomas, fracture of the bones, injuries of the capsule and of the nerves; the poor results as shown by statistics.

The first point, the frequently quoted impossibility of obtaining a reduction by the bloodless method, has been discussed enough and needs no further explanation. Sherman, in his paper, constructs on this infinitesimally small chance of not being able to accomplish a reposition within the proper age limits, a peremptory postulation to treat all cases by the open operation, without making an effort to reduce the dislocation by maneuvers, saying: " . . . if we are to save these cases, irreducible by manipulations, from the risks of forcible manipulation, we must save all, for no one can tell *a priori* which case is to prove reducible and which is not; and that will mean that all congenitally dislocated hips shall be reduced by arthrotomy."

The so-called dangers of the bloodless method, which have been discussed so often in various places, collapse if the operator, and this especially holds good for the unskilled operator, keeps himself within the age limits. All accidents, such as fractures and so on, are due to the fact that the operator either tries to increase the age limits or that he resorts to too much force without the exact knowledge of how much the tissues are able to stand. Both mistakes were made and are made frequently by the unskilled operator; if an accident then happens, of course "the method is responsible for the mischief done."

Lorenz himself made the same mistakes in the beginning and in this sense he reports them in his book. Similar cases are always reported if a method is comparatively new and its indications still unsettled.

Fractures of the bone and ruptures of the capsule can be promptly excluded by care or by resorting to a kind of preparatory treatment consisting in tenotomies and extension if greater difficulties should be foreseen.

The same is not true of the subcutaneous lacerations of some muscles (like the adductors) and the extravasate which is observed in many cases. No complication, however, ever results from their presence. No one should believe that accidental lacerations are absolutely excluded by using the open method. Sherman's case, in which the perineum was torn, is a classical example of this. Everyone knows that the resistance of the shortened muscles of the hip joint must be overcome by traction alone in performing the open operation. Therefore, it can be safely said that paralysis is more apt to happen in the course of an open operation than after a bloodless operation. This especially holds good for the paralyses of the sciatic and principally of the peroneal nerves. Sherman also reports a case of paralysis among his twenty-eight cases.

As the peroneus nerve is fixed where it enters the capsule of the peroneal muscles, it is easily understood that the fibers have to be stretched to overcome the shortening caused by the dislocation. As the knee joint is held rectangularly after the bloodless operation, the strain on the peroneal fibers is relieved, whereas the straightened knee joint held in a straight position by the cast after the execution of the open operation does not afford any relief. In consideration of this fact, which can be proved by experience, one of the strongest claims of the open operation falls to the ground. Another kind of paralysis which sometimes develops after the bloodless reposition does not deserve any consideration at all; it is the so-called paralysis of the quadriceps; this disappears spontaneously within two or three months, not leaving the slightest sign of its presence.

It must not be forgotten that there are dangers which are connected with every open operation and which neither the best technic nor the most skillful operator can exclude with absolute certainty.

Sherman asks why the orthopedic surgeon should be afraid to open the hip joint. I think it is safe to say that not one of them is "afraid" to open it, but that a good many of them decline righteously the responsibility of representing this procedure "as absolutely harmless" so far as the life of the little patient is concerned. It is a matter of fact that every operator who resorted to the open operation on a large scale had deaths among his cases, although the percentage may be small, perhaps 2 or even 1 per cent. This should make it apparent that among 28 cases no death must necessarily occur.

If, however, such an accident happens and sepsis claims a victim, then we can not compare such a death with an exitus after an appendectomy or laparotomy.

We never performed nor ever will perform any operation for a dislocation of the hip joint under a coercion similar to that which lets the surgeon choose between death and the operation, because all orthopedic operations have only a conditional indication.

One of the main questions of the parents is, and always will be, whether there is positively no danger connected with any of the proposed operations. With regard to the open operation, I leave the answer to the honesty of the surgeon whom it may concern; with regard to the bloodless operation, however, an affirmative answer to this question can be given quite frankly.

At all events, no death which should occur after an open operation performed for reduction of a congenitally dislocated hip joint can be excused, for nowadays the bloodless method has been developed and such accidents are excluded.

A total failure meets the recommendation of the open method if statistics of the bloodless method are referred to. Sherman, however, in quoting statistics comes to the opposite result; fortunately, however, he quotes two sets of statistics, which can not be considered as giving valid figures.

The first is the statistic of Wolff, a fanatic believer in the Lorenz method who died in 1900. He began experimenting with this method in 1896. No one can expect that his first cases could show the best figures possible. Nevertheless, his statistics in question showed 25 per cent. of anatomic cures. Since then the method has been developed to a much higher degree of efficiency, so that Wolff's statistics can not be quoted seriously to-day.

The other statistics quoted by Sherman are Ridlon's,[4] which, although published in 1904, are not at all fitted to prove anything. The many objections which can be made to his statistics I[5] described in a previous paper. I do not wish to fall back on them in this place, but wish only to mention that Ridlon's statistics deal mostly with cases operated on by Lorenz during his visit in

4. Ridlon: THE JOURNAL A. M. A., April 16 and 23, 1904.
5. Mueller: The Lorenz Operation as Seen in the American Statistics. Ill. State Med. Jour. October, 1904.

this country, and showed about 10 per cent. anatomic results. The fact that many of these cases were unsuitable for the operation because of the advanced age or because they had been operated on before, or that other cases such as the suprapubic positions (anterior transpositions, Ridlon's) did not get the right kind of after-treatment (depression of the head) has been alluded to in the beginning of this paper.

Fortunately there are other reliable statistics[5] existing, among which I wish to point to those published quite recently and quoted by me in my above mentioned paper, as well as at the Atlantic City meeting of the American Orthopedic Society, 1904.

These statistics are compiled by E. Mueller, Stuttgart; Joachimsthal, Berlin, and Drehmann, Breslau, and were published in 1903. The numbers of the anatomic results are 28 among 40, 17 among 23, 43 among 56, respectively.

Altogether, they show more than two-thirds of anatomic cures. From this it is to be seen that Lorenz is very conservative in pronouncing a possibility of 50 per cent. anatomic cures. Seventy-five per cent. would not be too much, and, with some improvements of the method, a still greater percentage might be obtainable.

Another statistic recently published by Braun[6] shows 57 ideal anatomic results among 117 joints; excellent functional cures were obtained in 72 of these 117 cases.

We must not lay too great a stress on the anatomic results alone, however. We have also to consider the remaining 33 or 25 per cent. of cases which do not give a central reposition, but only a subspinal position (anterior superior redislocation). In these cases we always find such a great improvement that—suitable after-treatment provided—the overwhelming majority give such excellent functional results that they can truly be called a cure. The fact that no subspinal position is ever combined with partial ankylosis or stiffness of the hip should be highly appreciated.

This fact renders the second-class result after the bloodless reposition by far superior to the second-class result of the open operation, where we obtain ankylosis; as far as the functional result alone is concerned, the subspinal position exceeds even many so-called first-class results of the open operation. Therefore, Lorenz, who had his experience with the postoperative ankyloses after the open operation, knew why he called the subspinal positions "good" results, and every orthopedic surgeon who has had the misfortune to get a double ankylosis after an open operation, thus crippling the patient more than before, must agree with him.

We have all been taught that the first principle of medicine should be: *Primum non nocere.*

If we keep this in mind and if we are desirous to avoid even a mere chance of offending against it, we can have no doubt which method, whether the open or the bloodless, will be the method of the future days.

6. Braun: Zur unblutigen Therapie der Luxatio coxae congenita. Langenbeck's Arch., 1904, vol. lxxiv, No. 3.

A Bandage for Varicose Veins.—A zinc-glue bandage may be made of gelatin, glycerin, zinc oxid and water, heated in a water-bath and applied to the bare skin with a painter's brush. Then a gauze or cheese-cloth bandage is applied, very evenly and not too tight. This is painted with a zinc-glue, and a new bandage applied outside it. Such a bandage may be worn from five to eight weeks without change. Dr. H. Keogh states, in the *Northwestern Lancet*, that dozens of his patients who have been almost in depair at the annoyance of their varicose legs, have been made comfortable by this bandage.

INTESTINAL PERISTALSIS.

ACTION OF DIFFERENT AGENTS ON IT.

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The recent method of Professor Magnus[1] of Heidelberg in the study by registration of the intestinal movements has simplified the investigation of the action of agents on the intestine. Magnus names two kinds of periodic movements of the intestine: 1, the pendulum movements, which follow each other rapidly in a contraction and relaxation of the intestine; and, 2, a tonus variation, much slower, but making periodic changes in the intestine. Drs. Kubliabko[2] and Alexandrowitsch, using the method of Magnus, have published a preliminary note on the action of several agents on the movements of the intestine.

Our experiments were made by taking a piece of the small intestine, about 10 centimeters in length, of a rabbit or cat. This was placed vertically in a glass containing 225 c.c. of the modified Ringer solution as advised by Magnus. One end of the intestine was fastened by a hook to an L-shaped glass tube and the other by a thread to Porter's heart lever, slightly weighted. The intestine was wholly immersed in the solution through which oxygen was constantly streaming. The temperature of the Ringer solution was about 37 C. The heart lever registered the contraction of the longitudinal muscles of the intestine on the smoked drum.

Before adding the agent to be experimented with to the Ringer solution several contractions were recorded before the substance was dropped into the solution containing the intestine. The changes then induced in the intestinal contractions indicated the action of the agent on the longitudinal muscles. The number of experiments was 115.

ADRENALIN.

Ott[3] was the first (1897) to call attention to the fact that adrenal extract caused a relaxation of the intestinal wall. This was afterward confirmed by Boruttau (1899), Langley (1901) and subsequently by Pal (1901) and Kubliabko (1904). In these experiments we used the adrenalin of Parke, Davis & Co.

As is well known, adrenalin excites the smooth circular muscles of the arterioles to contract, but in the intestine it causes the longitudinal muscles to relax and to stop the pendular movement.

It seems to exert its action on the unstriped muscular fiber. Langley has shown that the effect of adrenalin on unstriped muscle was the same as exciting the sympathetic nerve supplying that particular tissue. Elliot[4] has shown that, after section of the nerves going to the plain muscle of the dilator pupillæ and after their degeneration for three days or ten months, the plain muscle will respond to adrenalin with greater rapidity and longer persistence than does the iris, whose nervous relations are intact. Hence the conclusion that adrenalin acts on the muscular fiber of the intestine. When

1. Pflüger's Archiv, 1904.
2. Zentralblatt für Physiologie, 1904, July.
3. The Peristaltic Action of the Intestine, Medical Bulletin, 1897.
4. Proceedings of Physiological Society, Jour. of Physiology, 1904.

the intestine was painted with a 2½ per cent. solution of cocain, or treated with small doses of nicotin, pilocarpin, muscarin, eserin, apocodeia, morphin, digitalin, curare, albumose, chloral and veratria, still adrenalin exerted its peculiar action, arresting the pendulum movement and producing a relaxation of the longitudinal muscles of the intestine. One drop of adrenalin solution was sufficient.

SPLEEN.

Ott[5] first noticed that a filtered watery infusion of the spleen when injected into the circulation increased the peristaltic movement both in frequency and force. In this method of study a similar effect was observed.

PANCREAS.

One drop of filtered infusion of the pancreas in the cat was seen to relax the muscle and to slow the movements of the intestine. At the same time the force of the contraction was increased.

OTHER ANIMAL EXTRACTS.

Experiments were made with the ovary, testes, parotid and mammary gland, pituitary, thyroid, brain and spinal cord, but they had no marked effect on intestinal peristalsis. The thymus occasionally seemed to increase the force of the contraction.

SODIUM CITRATE AND CALCIUM CHLORID.

John Bruce MacCallum[6] has shown that sodium citrate, as well as other saline purgatives, act when injected subcutaneously by increasing peristalsis and by augmenting the secretion of fluid in the intestine. He has also shown that injection of calcium chlorid entirely inhibited the action of the saline, especially that of sodium citrate. We have made observations on the effect of sodium citrate (¼ grain), which increases the force of the peristaltic contractions; when calcium chlorid (1 grain) was added the muscle relaxed and the contractions became weaker, slower and irregular.

MacCallum thinks purgatives act by the removal of calcium ions from the tissue, and the subsequent addition of calcium restores the tissue to a normal condition. Loeb has shown that the salts which produce rhythmic contraction of the involuntary muscle are those which are liable to decrease the concentration of the free calcium ions. Hence calcium is indicated in persistent diarrhea of nervous and hysterical cases.

OTHER DRUGS.

Atropin.—In small doses (1-100 grain) in the cat it relaxed the tonus and increased the force of the contractions.

Nicotin.—In the rabbit in small doses (1/100 grain) it caused a sudden tetanic contraction of the intestine, followed by a slow relaxation. In cats it caused at once a great decrease in the tonus and then a stronger and slower contraction.

Eserin.—In the rabbit eserin (1-60 grain) produces a rapid tetanic contraction of the muscle, followed by alternate falls and rises of tonus, with smaller and slower contractions.

Muscarin.—In the rabbit muscarin (1-60 grain) produced a sudden contraction of the intestine, followed by a gradual relaxation.

Pilocarpin—In the cat small doses (1/60 grain) caused the most prolonged tetanic contraction of the muscle, with occasional relaxation of the tetanic state, followed by a slower and stronger contraction.

Strychnia.—In small doses strychnia (1/50 grain) increased the height of the contractions.

Curare.—Curare in small doses reduced the force of the intestinal contractions.

Apocodeia.—In small doses (1-100 grain) it increases the force of the contractions and makes them slower.

Morphin.—In the cat in small doses it increases the tonus and the force of the contractions, but slows them. Here morphia has a different action than in man.

Digitalin.—In doses of 1-80 grain it increased the tonus and made the contractions considerably greater.

Chloral.—Chloral in small doses reduces the force and frequency of the contraction.

Veratria.—Veratria in small doses reduces the force and frequency of the contractions.

ORGANIC BODIES.

Bile.—One drop of fresh bile caused the contraction of the muscle to become stronger.

Albumoses (free from peptones).—The albumose was furnished some years ago by Professor Chittenden of Yale. It was prepared from egg albumin. When a small dose (1-10 grain) was used it increased the tonus and the force of the intestinal contraction and made them more regular.

Peptones (free from albumoses).—Ampho-peptone, prepared from egg albumin by Professor Chittenden, was also used. It increased the force and frequency of the intestinal contractions.

Leucin (Merck).—It increased the force and frequency of the intestinal contractions.

Tyrosin (Merck).—It increased the force of the intestinal movements.

It is evident that the products of proteid digestion are active stimulants of peristalsis. A good digestion predisposes to a regularity of evacuation of the bowels.

These facts explain the habitual constipation of dyspeptics.

ANTAGONISM OF DRUGS ON INTESTINAL PERISTALSIS.

With the idea of obtaining a closer insight into the action of drugs on the intestines, several experiments were made to determine if one drug prevented the action of another previously given.

Small doses of the drugs were applied to the intestine in solution. The table gives the results:

AFTER COCAIN.

(Two and one-half per cent. solution painted on the intestine.)
No action by nicotin, pilocarpin, muscarin.
There is an action by eserin, atropin, morphia, digitalin.

AFTER ATROPIN.

No action by nicotin (in rabbit; acts in cat), pilocarpin, muscarin.
There is an action by eserin, morphin, digitalin.

AFTER ADRENALIN.

No action by nicotin.
There is an action by pilocarpin and muscarin.

AFTER MORPHIN.

There is an action by atropin and nicotin.

AFTER DIGITALIN.

There is an action by nicotin, atropin.

AFTER ESERIN.

There is an action by atropin.

AFTER CURARE.

There is an action by nicotin.

ADRENALIN.

Acts after cocain, nicotin, pilocarpin, muscarin, eserin, apocodeia, morphin, digitalin, albumose, curare, chloral, veratria.

As nicotin is known to act on the terminals of the preganglionic fiber, it is evident that it probably acts in a like manner on the intestine. Eserin antagonizes atropin, and atropin acts after eserin. As atropin acts on the post-ganglionic fibers of the vagus, it is probable that it also acts on the post-ganglionic fibers in the intestine. Eserin also in all probability acts on the

5. Medical Bulletin, 1897.
6. University of California Publications, vol. 1, 1904.

post-ganglionic fibers. These facts do not preclude an additional action on the intestinal muscle in larger doses of these drugs. Magnus has shown that Auerbach's plexus is important to the rhythmic activity of the circular muscles. The removal of Meissner's plexus permits the circular muscles to continue their rhythmic contractions. The longitudinal muscles which have Auerbach's plexus in connection with them continue their automatic movements. Hence the conclusion follows that the automatic movements of the intestinal musculature are not myogenic, but dependent on Auerbach's plexus. Magnus has also shown that not only is the plexus of Auerbach a source of automatic movement, but that it in a large part governs the rhythm, and that the refractory period in the intestine is due to the presence of the nerve centers.

Bayliss and Starling have stated that painting a 2.5 per cent. solution of cocain on the intestine paralyzes the local nervous system. They have shown that in fact Auerbach's plexus is a local nervous system with two reflexes, inhibition and augmentation, and one function, the propulsion of food. Now, after the use of cocain it was noted that nicotin, pilocarpin and muscarin did not act. We have stated the point of action by nicotin. As to pilocarpin and muscarin, they act in the heart on the inhibitory ganglia. After cocain they do not act. As cocain paralyzes the nervous apparatus, it is highly probable that they act normally on the plexus of Auerbach.

After the intestine is painted with cocain then eserin, atropin and morphia still act, and as the nervous system of the intestine is paralyzed it is inferred that these agents act on the motor nerve terminals. For it is known that one of them at least, atropin, paralyzes the post-ganglionic fibers of the vagus. As to digitalin, it acts on the muscle of the intestine, as it exerts its activity after the previous use of cocain.

During the action of adrenalin, nicotin does not act, although pilocarpin and muscarin do. It is probable that nicotin has not enough stimulant action to overcome the muscle relaxation caused by adrenalin.

THE ESSENTIALS OF TREATMENT OF ACUTE INFLAMMATION OF THE MIDDLE EAR.*

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I am not unmindful of the diversity of opinion among otologists as to the essentials of treatment of an acute inflammation of the middle ear; and in giving my personal opinions, based on considerable observation and experience, it is possible that I shall advocate some measures which may seem somewhat radical and not thoroughly approved by some of you. It is gratifying to know, however, that the trend of medical teaching to-day is in favor of more radicalism in the treatment of acute middle-ear inflammations and that the so-called conservative treatment, in the management of these cases, is considered by most progressive otologists as carrying with it a decided element of danger.

Most authors divide acute inflammation of the middle ear into two forms, the catarrhal and the purulent. Clinically, the two forms should be considered as different stages of the same disease, the difference in the character of the inflammatory process depending on the presence and activity of the infection and the resisting power of the tissues, features that are always factors in the production and the limitation of an inflammation of the middle ear. When an acute inflammation of the middle ear does not end in suppuration it is either because the micro-organisms necessary for suppuration are not present or because the resisting power of the tissues renders them ineffective.

Bacteriologic investigations have shown that various micro-organisms can produce similar pathologic effects on the middle ear, but as a rule the milder forms of middle ear inflammation are produced by the pneumococcus or the staphylococcus, and the severer forms by the streptococcus (Nadoleczny). The fact that the milder forms of middle ear inflammation often run into the severer forms makes it difficult if not impossible in many cases to distinguish the two forms of inflammation described by most authors. Neither subjectively nor objectively will the symptoms in a large percentage of cases give evidence of the character of the infection at work, for in some individuals the pain will be very severe and the congestion of the membrana tympani pronounced in a comparatively mild inflammation, while in others the pain will be slight and the external evidences of congestion not marked in a very severe inflammation.

In probably 99 per cent. of all cases the infection reaches the middle ear through the Eustachian tube. Even in healthy individuals the bacteriologic examination of the secretion from the nasopharynx almost always shows the presence of a certain number of pathogenic bacteria, and in the presence of diseased conditions of the nasopharynx, as in the case of hypertrophied and degenerated conditions of the lymphoid pharyngeal structures, or inflammation of the nasal and pharyngeal mucous membrane accompanying many of the infectious and contagious diseases, the number of pathogenic bacteria is greatly increased.

The extension of bacteria to the middle ear by means of the eustachian tube is accomplished by mechanical means, as from pressure while blowing the nose and while swallowing, or by extension of the inflammation through continuity of tissue. Predisposition, as well as activity of the infection, will in a large measure determine the extent and the severity of the inflammation. If the infection is mild the inflammation may not result in suppuration but may continue to the end devoid of severe symptoms or manifestations, and as such it may be classed with the catarrhal inflammations in which the exudation is sero-mucous in character and the bacteria few in number and of low vitality. It should be remembered, however, that such an inflammation may be transformed into the suppurative type through introduction of more active infection through the Eustachian tube or, in case of perforation of the drum membrane, through the external auditory canal. What, therefore, begins as a comparatively mild inflammation may very quickly pass into a severe inflammation with all the attending danger of complications and perhaps loss of life. This transition of one type to the other may be so rapid as to escape early recognition unless the otologist is in a position to watch the progress of the inflammation much more closely than is generally the case, and as a result proper treatment may be adopted too late to limit ravages of the disease which might have been limited or prevented by earlier attention.

The possibilities of an earache, and a moderately congested ear-drum in whole or part, are not limited

*Read before the American Otological Society at Toledo, Ohio.

to a few hours or days of discomfort and of moderate impairment of hearing which a hot-water bag and judicious politzerization will relieve, but include all the dangers which accompany a violent inflammation in a region connected with or surrounded by some of the most vital structures in the body. The recognition of the possible seriousness of every earache and the gravity of every acute inflammation of the middle ear, and the necessity for prompt and energetic treatment of such conditions can not be too forcibly impressed on the minds of general practitioners and public if we are to make any progress in limiting the number of cases of partial or complete deafness, intracranial complications, and fatal results which now frequently follow middle-ear diseases.

Prophylactic treatment in cases predisposed to middle-ear inflammation is too often overlooked or is given inadequate attention. The mild earaches which promptly subside under simple treatment, or under no treatment at all, should lead to an investigation as to the predisposing causes. In the majority of such instances there will be found various forms of diseased conditions of the upper respiratory tract. In children adenoids and enlarged tonsils are a prolific source of middle-ear inflammation, while in adults obstructive lesions of the nose are more frequently predisposing factors. Such conditions should be recognized and should be given prompt attention if we are to do the most to prevent the development of many acute inflammations of the middle ear. Lowered resisting power from the effects of various debilitating diseases should also receive appropriate constitutional treatment, while the local treatment of the nose and throat in the exanthemata, influenza and all other infectious or contagious diseases in which the mucous membrane is affected should never be neglected.

In practically every case of acute middle-ear inflammation the patient seeks relief because of discomfort or impairment of hearing or both. Treatment must be instituted which will have a tendency to relieve pain, to prevent complications from extension of the diseased process, and to restore the hearing. It would seem superfluous to condemn the use of opiates for the relief of pain, and yet as a few text-books recommend this treatment with but little qualification it seems pertinent to oppose it on the ground that opiates mask the symptoms and at times give the patient, as well as the surgeon, a sense of false security. Pain is only a symptom and is of sufficient diagnostic importance to warrant no treatment which will simply obtund it without relieving the diseased condition which is causing it. Dry heat will generally give relief if measures short of operative are to be sufficient to produce the desired results. But as the pain is due to pressure from congestion and exudates resulting therefrom, the essential treatment must come from depletion. This may be accomplished in whole or in part by catharsis, leeching, the application of carbolic acid and glycerin solution to the membrana tympani for its osmotic effect and by direct incision into the congested tissues. When seen early or before there is marked congestion of all or of any part of the membrana tympani, the inflammatory process may often be checked by free purgation, the use of leeches to the tissues immediately in front of the tragus, carbolic acid (10 per cent.) and glycerin tampons, and the application of heat to the ear. More often, however, the patient does not seek the aid of the physician until the membrana tympani is decidedly congested if not already bulging, and then to delay the more heroic measure of incising the drum membrane is to invite complications and to prolong the suffering of the patient.

Many otologists of skill and experience recommend waiting until there is bulging of the membrana tympani before making an incision, and even go so far as to call it pernicious and meddlesome surgery to incise the drum membrane at any other time than when there is bulging. It is accepted as a fact that sometimes a waiting policy brings with it good results, but there are some of us who, having seen unfortunate results from the waiting policy, prefer not to take the chances. If we remember the direct connection which exists between the mastoid antrum and the middle ear, and the tendency for infection to travel, especially in the direction of least resistance, we can readily understand how the infective process may extend to the antrum without indicating its tendency to extension by bulging of the drum membrane, particularly in cases in which the drum membrane is abnormally unyielding, as is not infrequently the case. I have seen mastoid complications which came to operation without bulging of the drum membrane ever having occurred, and I am satisfied that the complication would not have occurred had early and free drainage through the membrana tympani been established.

When properly done, incision of the drum membrane is appropriate treatment of those cases of acute inflammation of the middle ear, either with or without severe pain, which present marked congestion of either a part or the whole of the membrane, and whether bulging or not. By means of the incision, depletion of the tissues is secured, the pressure is reduced and the associated pain is relieved, required drainage is established, and in the majority of cases mastoid and other complications are prevented. The incision should be free, preferably in the posterior quadrant, and should be performed under strict aseptic precautions. Subsequently, the external auditory canal should be packed with a strip of dry sterile gauze, the end of which should be placed against the drum membrane for the purpose of drawing the secretions from the ear by capillary attraction. Due care should be taken to keep infection from entering from without. This can be accomplished by pursuing the ordinary rules of surgical cleanliness when replacing the gauze, as becomes necessary when it becomes saturated with secretion from the middle ear, and by keeping the outer ear covered with an aseptic absorbent pad of cotton or gauze. When the discharge from the ear is profuse the gauze will require removal frequently, and before inserting fresh gauze the canal may be wiped dry with sterile cotton wrapped on a probe.

Following incision of the membrana tympani, treatment directed to the relief of any nose or throat troubles may be continued, and inflation practiced in the usual way. Early syringing is generally to be avoided as being detrimental through increasing the maceration of the tissues, though in the later stages with an increase in the amount and purulency of the discharge careful syringing under aseptic precautions is appropriate. Local medicinal applications to the middle ear are also considered superfluous, if not detrimental, in the early treatment. The gauze packing should be continued until the perforation in the drum membrane has closed.

In those cases which are commonly called catarrhal, in which the infection is of low vitality and in which

the discharge is sero-mucous in character, the relief by incision is prompt, and unless more active infection is introduced through the Eustachian tube or the external auditory canal, the discharge seldom lasts more than a few days, sometimes but a few hours, on the cessation of which the clean-cut opening rapidly closes and, following a short period of inflation, normal hearing returns.

Like any other surgical procedure, incision of the drum membrane should be done under aseptic precautions, the knife being sterile and the external auditory canal and drum membrane having been made as sterile as possible by thorough cleansing with a 1 to 3,000 bichlorid solution. Following the opening of the drum membrane, infection from without should be prevented by using only sterile instruments and gauze in the external auditory canal. If these precautions are followed there can be no possible cause for the charge by a well-known otologist that "opening of a drum membrane that is not bulging is pernicious practice." Rather is it more appropriate to say that it is pernicious practice to delay the adoption of such an inoffensive measure, when done properly, in those cases of congested drum membrane which from the rapidity of progress, severity of symptoms, predisposition from impaired health or the presence of complicating infectious or contagious diseases, give indication of steadily progressing inflammation to the point of bulging of the membrane and spontaneous rupture unless anticipated. I have never seen any complications arise from a properly done early incision of the membrana tympani which I believe would not have occurred any way. On the other hand, I have seen delay in cessation of the discharge, impairment of hearing and sometimes more serious complications which I believe might have been limited or prevented had incision been performed before bulging occurred. In the early years of my practice it was my rule to await bulging before opening the drum membrane. Since adopting the more radical treatment of incision with the appearance of marked redness, my results have been better from every standpoint and my patients have been spared unnecessary suffering, prolonged treatment, impairment of hearing and other possible complications which I am sure would have followed a less radical course of action. In a series of 20 operations for acute mastoiditis performed during the past 18 months, 12 of the cases had rupture of the drum membrane spontaneously, 6 had incision on appearance of bulging, and 2 had intact drum membranes at the time of the mastoid operation. During the same time, out of 11 cases of acute inflammation of the middle ear, with late incision of the drum membrane, all but 1 case required more than 6 weeks for recovery. In a series of 32 other cases in which early incision of the drum membrane was performed, only 1 case required over 3 weeks for cure, and a majority of the cases recovered in less than 10 days and not a few in less than 5 days.

With early incision the pain is almost immediately relieved, the intensity of the inflammatory process is diminished, the exudate in the tympanic cavity is given an outlet, thus lessening the tendency to extension to adjoining structures and producing more serious complications, and the chances for adhesive changes in the sound-conducting apparatus are lessened.

In the early treatment of every case it is advisable to secure a prompt and free movement of the bowels. Calomel in small but frequently repeated doses, followed by a saline, is best for the purpose. The patient's chances for an early recovery will also be increased if he is kept in bed until the active inflammation in the middle ear has subsided. For the relief of neuralgic pain, if present either before or after the incision of the drum membrane, dry heat will be found most agreeable to the patient. In every case the catarrhal conditions of the nose and nasopharynx should be treated, but during the height of an acute middle-ear inflammation it is seldom necessary to do anything more than to cleanse the nose and the throat with an alkaline antiseptic spray to aid in preventing infectious material from entering the Eustachian tube. During the course of a middle-ear inflammation or the progress of an infectious or contagious disease the patient should be advised to blow the nose with caution, with a view to preventing the forcing of infection into the tympanic cavity. In children enlarged tonsils and adenoids are hotbeds for the retention and the development of infection which predispose to inflammations of the middle ear, and their removal should be accomplished without delay. The treatment of a constitutional dyscrasia should also not be neglected, for the administration of tonics, alteratives or other indicated treatment will do much to hasten recovery from the ear complication.

Inflation by Politzer's method in the presence of an intact membrana tympani, while seemingly beneficial in some cases, may be productive of harm in others. There can be not the slightest doubt that infection may be forced from the tympanic cavity to the epitympanic space, and thence into the mastoid antrum, by inflation, even when skillfully performed; and the possibilities of changing what is and what might remain a mild infection of the middle ear into a severe infection by forcing more active micro-organisms through the Eustachian tube by inflation should not be considered lightly. I am firmly convinced that I have on more than one occasion, in the earlier years of my practice, been indirectly responsible for an unfortunate change in the character and severity of an acute inflammation of the middle ear by following the practice, too freely recommended by many reputable otologists, of inflating the middle ear cavity in the presence of active inflammation. In recognizing the evil effects of the treatment, I am not willing to admit any laxity on my part in observing the precautions ordinarily followed. The evil effects have occurred by forcing infection to regions hitherto uninvaded, and the complications thus brought about were not dependent on any carelessness in the methods employed. It is more rational treatment to postpone inflation until the acute symptoms have subsided, or until the membrana tympani has been opened.

In my judgment acute inflammation of the middle ear is essentially a surgical disease, and its successful treatment depends on the early establishment of drainage, but in a summary of the recommendations for the treatment of the affection from its incipiency I would say:

1. The patient should be kept quiet, preferably in bed, and the more active the symptoms the more necessary for the enforcement of this measure.

2. Secure a prompt and free movement of the bowels by means of calomel and salines.

3. Secure depletion of the vessels of the membrana tympani and the tympanic cavity by leeches applied to the region immediately in front of the tragus, and the osmotic effect of carbolic acid (10 per cent.) and glyc-

erin tampons applied directly against the drum membrane.

4. Cleanse the nasal and pharyngeal mucous membrane with a saline antiseptic spray or douche. Remove any existing hypertrophied lymphoid tissue.

5. Advise cautious blowing of the nose to limit introduction of infection to the tympanic cavity.

6. Apply dry heat to aid in control of pain.

7. Incision of the drum membrane under strict aseptic precautions on the appearance of pronounced redness of any portion of that organ when accompanied by pain, impairment of hearing and other evidences of acute inflammation.

8. Following perforation of the drum membrane the use of aseptic dry gauze packing for the purpose of excluding infection from without and also to withdraw the discharge from the tympanic cavity by capillary attraction.

9. Syringing, under aseptic precautions, only when the discharge is purulent and profuse, to be followed by as thorough drying as possible with sterile absorbent cotton.

10. Judicious inflation by Politzer's method only after the acute symptoms have subsided or after the drum membrane has been opened, to facilitate removal of discharge from the tympanic cavity and to prevent adhesive changes in the sound conducting apparatus.

11. Appropriate treatment of any associated systemic disease.

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TURNING IN ORGANIC HEMIPLEGIA.

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Dr. Leonard J. Kidd recently discussed the mode of turning in walking of organic hemiplegics and spastic paraplegics and referred to a paper by von Schüller in which the latter says that an organic hemiplegic cannot walk toward the sound side, as he must drag the paralyzed leg after him. It is also pointed out that the functional hemiplegic does not walk toward the palsied side but only toward the sound side, and Kidd concludes that the direction in which the hemiplegic turns is of equal diagnostic value, and that this test causes less inconvenience to the patient. To prove the correctness of this opinion, he examined hemiplegias and spastic paraplegics who were more spastic on one side or the other, and found that fully 99 per cent. spontaneously turned to the spastic or more spastic side. From this he draws the following conclusions:

1. If such a patient in walking turns round to the affected side or more affected side, an organic lesion is present.

2. If he turns to the sound or less affected side the case may be one of either functional or organic affection; a cursory examination will determine which.

As he urges clinicians to observe the direction in which a patient turns who is weak or spastic on one side, and as no one else has attempted to confirm his conclusions, I examined 36 cases of organic hemiplegia in order to determine the value of his observations. The patients were made to walk in some open place, to turn round of their own accord and to come back to the starting point. This was repeated and when the strength and facility of walking permitted, 10 turns were made.

In some cases, the mentality was such that the patients could not be made to walk away and to return merely on being told to do so, and it was necessary in these cases to call to them to come back.

It was found that the direction from which came the sound of the voice, and the presence of persons or objects, were sufficient to determine the turning in some particular way. As far as possible, crutches, canes and all outside influences were removed. It was found that only 67 per cent. of the whole number turned to the affected side, 16 per cent. turned to the sound side, and 16 per cent. turned indifferently to either side; a difference of over 30 per cent. from Kidd's figures.

While most hemiplegics seem to turn by preference to the more affected side, they do so in such numbers as hardly to make it a rule. Moreover the less the paresis and the greater the difficulty of determining between organic and functional complaint, the more indifferently the patient turns to either side, as shown by the fact that half of those examined who turned to either side walked excellently. The factors which determine the direction in which a hemiplegic patient turns seem to be many, but it may be said that when the paralyzed limb has marked foot-drop and contracture in that position, it becomes necessary to sweep the foot around in a large circle to bring it forward, and the turning is done on the other foot as a pivot. If the palsied leg be not so deformed, and it is not necessary or perhaps is difficult to swing the leg around, the turning is done on the affected leg as a pivot. If this is so, it is plain that there may be intermediate positions of deformity in which the patient turns to either side. One patient examined said that he turned according to which foot was foremost at the time, his position determining the direction, but most of those who were asked after being examined did not confess to its being any easier to turn one way than the other. Several hemiplegics moreover who turned consistently to one side were examined and told to turn in walking at such times as one or the other foot was advanced, but they nevertheless turned toward the same side as formerly, so that at most the patient's position explains but a part of the phenomenon.

If it can be shown that a functional hemiplegic ever turns to the affected side, and observations are perhaps needed to that end, the value of Kidd's deductions is much lessened. While the above findings do not disprove his conclusions, that a man who turns to the affected side is organically diseased, they make that fact applicable as a test to fewer cases, and consequently leave a larger proportion open to other means of diagnosis.

I am indebted to Dr. William G. Spiller for the use of his wards at the Philadelphia General Hospital, where about half of the cases examined were obtained, and also for his corroboration of part of the work done.

1. Kidd: Review of Neurology and Psychiatry, November, 1904.

Management of Labor.—1. Absolute asepsis as regards the puerperal woman, lying-in room, and the person of the accoucheur. 2. A careful diagnosis of the position of the child should be made before the completion of the first stage of labor. 3. Watch expectantly the progress of the labor. 4. Non-interference during the labor except for cause. 5. A clean delivery of the placenta. 6. Be assured that there is a good contraction of the uterus before leaving the patient. 7. After the delivery, examine carefully by ocular inspection, and see if there is any laceration of the perineum. 8. If a laceration be discovered, repair at once.—*Medical Visitor.*

THE PREVENTION OF SHOCK AND HEMORRHAGE IN SURGICAL PRACTICE.*

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INTRODUCTORY.

During the past eleven years I have conducted an experimental laboratory, in which some of the problems suggested in surgical practice have been investigated. On some we failed to throw any light; in some our results were inconclusive; and in others their solution seemed to have been found, or at least useful data obtained. These were published in four monographs, to wit: *"Surgical Shock,"* 1897; *"Research into the Surgery of the Respiratory System,"* 1899; *"Problems Relating to Surgical Operations,"* 1901; *"Blood Pressure in Surgery,"* 1903.

On the clinical side during a corresponding period, we accumulated notes on 5,800 major operations in general surgical service, including every variety excepting certain operations on the eye and ear.

The discussion of the various operations is only from the restricted viewpoint of the title of this paper. In the experimental as well as the clinical work my associate, Dr. W. E. Lower, was actively engaged during this time and shares fully with me the responsibility for the results.

In this paper we shall assume that pure surgical shock is mainly due to the effect on the vasomotor centers of the afferent impulses set up by trauma, exposure, etc.; that each such impulse modifies these centers; that a sufficient number of such impulses with sufficient intensity over a given period of time causes the vasomotor centers to lose their excitability; that during the production of this functional impairment and final breakdown the blood pressure becomes irregular, becoming proportionately lower, and when the final stage of complete loss of excitability of the vasomotor center has been reached the pulse in the peripheral arteries can not be palpated and the carotid pressure would probably register not more than 20 mm. mercury. This would represent a picture of complete shock, presenting a very unfavorable prognosis. The symptoms are a close counterfeit of those of hemorrhage, indeed, the state of the circulation is that of a transference of the blood to the venous side of the circulation; that is, it is an intravascular hemorrhage, but because the hemorrhage is intravascular the symptoms should not be unlike those of an extravascular hemorrhage. The afferent impulses may either be of such intensity or of such great numbers, or more usually both, as to cause this functional dissolution.

Among the accessory causes, aside from the afferent impulses mentioned, there may be mentioned certain factors that lower the physiologic resistance, viz.:

(*a*) Psychical excitation, such as fear, foreboding, etc. This needs only to be mentioned to be admitted, and it has seemed to me to be a more powerful factor than is usually considered.

(*b*) Hemorrhage. This also is a self-evident factor, and often very difficult to estimate closely.

(*c*) Cold. The depressing effect of the lowering of the body heat, as noted in exposure to cold on battlefields, in undue exposure in the operating room, and in many physiologic experiments, is well established. In practice I place the patient on a hot-water bed adapted to the operating table.

(*d*) Acute and chronic infections. In these infections there is a marked physiologic disturbance of many parts of the body, and certainly not the least is the circulatory mechanism.

(*e*) Anemia, cachexia, collateral diseases, etc.

(*f*) Age and sex.

Of all these accessory causes of shock we may for our present purpose reduce them to a physiologic basis as follows: The vasomotor centers have a normal definite range of functional capacity. When one or more of these accessory factors enter, this range of definite functional capacity is by so much definitely reduced. This is a plain physiologic law.

In practice one finds one or more of these factors in the vast majority of his patients. That is to say, most of our patients are handicapped in various degrees, from the slight to the grave, even fatal. These handicaps should be our special consideration, and our ability to correctly estimate them on the one hand, and to correctly estimate the vital cost to execute a given technic on the other, constitutes in my opinion the most difficult problem presented to our surgical judgment for decision.

OPERATIONS ON THE HEAD.

Horsley and Spencer long ago demonstrated the dangers of increased intracranial pressure, and Cushing has offered an explanation of the physiologic necessity for the increased general blood pressure under this condition.

In tumors, abscesses and hemorrhages, causing an increased intracranial pressure, the blood supply of the extracranial portion is increased. This was more especially noted in the veins. The blood pressure of the brain under these circumstances is at an irreducible minimum. Therefore, until decompression of the brain has been effected, it would be unsafe to materially lower it either by hemorrhage or anesthesia. After having lost one case of extensive, acute hemorrhage during the second stage of anesthesia, I have in severe cases opened the skull under local anesthesia.

In other instances I have, when necessary, detailed an assistant to give artificial respiration while the bone was rapidly cut away. Alternating heat and cold are perhaps the most powerful respiratory excitants. In two instances respiratory arrest was successfully combated on these lines.

The most severe cases were those of traumatic origin in which opportunity for physiologic compensation was greater. Marked assistance in control of the troublesome venous hemorrhage was obtained by applying the pneumatic rubber suit and placing the patient in the 45-degree upright posture, thereby gaining the advantage of gravity in decreasing the venous pressure in the vessels of the head and maintaining or even increasing the arterial pressure in the same territory. In opening the skull, if by mallet and chisel, it is very important to use the greatest gentleness, as both the clinical and experimental evidence show that the medulla is seriously disturbed by the repeated percussions of the mallet. In opening the skull, in my earlier cases, I am sure that the mallet and chisel provoked some serious circulatory disturbances. Since using only well-beveled, sharp chisels more precisely and a light mallet more gently, I have not detected any circulatory changes.

The supreme importance of reducing to a minimum the exposure and manipulation of the meninges and the brain can only be fully appreciated after noting the circulatory changes and the loss of cortical excitability

* Read before the Pittsburg Academy of Medicine, 1905.

in laboratory experiments. Unless precise arrest of the hemorrhage is made as the operation progresses the operator is quite likely to do unintended damage in sponging.

Since in intracranial operations sudden circulatory disturbances are always imminent, the blood pressure is in all cases continuously noted by a special assistant for that purpose. The patient is inclosed in the pneumatic suit during the early stages of anesthesia, and saline solution and adrenalin are at hand. That is to say, as complete preparation as possible for the control of the blood pressure is made.

CLAMPING THE CAROTIDS.

Since the first case, which was in 1897, I have closed the common or the external carotid artery 51 times with no unfavorable results. The effect on hemorrhage is found to vary greatly. In some the arterial hemorrhage is completely controlled; in others, owing to the greater collateral circulation, but particularly owing to the freer anastomosis, especially through the circle of Willis, a distinct peripheral pulse was noted. That is to say, the blood continued in a pulsating circulation from the opposite unclamped artery through the circle of Willis, causing a reverse current through the peripheral cerebral vessels of the clamped side, re-establishing the circulation through all the branches supposed to be closed off. This reverse circulation in several instances was sufficient to produce a pulsating hemorrhage in the severed terminal arterial branches of the external carotid.

In such cases closure of the external carotid would be more effectual, and in operations in which the factor of hemorrhage is of great moment, as in cases in which the tumor is supplied from both sides, both external carotids have been closed.

The venous hemorrhage, as we have said, is but slightly modified by closure of the carotids. At present the most effective means of lessening the venous hemorrhage is by posture—the head-up posture. In the past this has been the method of choice in all cases in which the danger of cerebral anemia was not present. The pneumatic rubber suit enables us to make free use of this position, as by means of it the blood is not permitted to accumulate in the veins of the body below the diaphragm.

So far as we now know the most favorable condition for controlling the hemorrhage in certain major hemorrhage risks is by closure of one or both common or external carotids according to the location, and the head-up posture with the patient inclosed in a pneumatic rubber suit.

LARYNGEAL AREA.

In such operations as intubations, laryngotomies, laryngectomies, intralaryngeal operations of all sorts, operators have reported instances of sudden collapse or death.

This is now well understood to be due to reflex inhibition of the heart and of the respiration from mechanical stimulation of the superior laryngeal nerve.

The cardiac collapse may be wholly obviated by previously administering a physiologic dose of atropin, or by applying cocain on the nerve ending in the laryngeal mucosa, or by injecting its trunk with cocain. Surgery scarcely claims a more definite law or a more striking phenomenon.

In the eleven total laryngectomies for carcinoma, in the first two, before the definite cause and prevention had been worked out in the laboratory, dangerous collapse occurred; in the remaining nine not even a change in respiration or in the heart rate was noted. Because of this dangerous reflex area in the larynx, tracheotomy, not laryngotomy, should be the operation of choice.

THORAX.

In intrathoracic infections with a seriously hampered respiration and a circulation dangerously impaired, one may often with greater safety do a morphin-cocain operation for a mere intercostal opening or resection of a rib, relieving the impending danger, and after the patient's forces are recruited, a more complete operation under surgical anesthesia may be made.

In intrathoracic procedures one must not lose sight of the supreme importance of the respiratory action on the circulation—constituting a great respiratory pump for the circulation, especially for the venous inflow. Even in the normal the circulation is most seriously hampered when both the pleural cavities are opened, thereby eliminating the suction power so necessary to fill the auricles.

In such cases, while by one of the various methods of positive ventilation of the lungs, as by the Fell-O'Dwyer apparatus, in pulmonary collapse oxygen may be freely supplied while the greater danger, that of circulatory collapse, is little if at all obviated. Extensive pressure on the other parts of the body is the most important in throwing back the blood into the thoracic circulation and permitting the heart to refill in the face of the loss of the respiratory pump.

In all intrathoracic procedures one must ever bear in mind the high importance of interfering with the great venous trunks, since their blood pressure is very low, they are surprisingly easily compressed. Such compression would have an immediate disturbing value to the heart's action, equal to a torrential hemorrhage.

ABDOMEN.

In abdominal operations the amount of shock depends in a direct ratio on the trauma and the exposure. This territory bears a rich supply of vasomotor nerves, and the effect of a given operation on the vasomotor center is the sum of the exposure and the intensity and the number of mechanical contacts with the delicately receptive nerves. It follows in practice as truly as in theory that a given operation in the hands of one operator may be manifold more shock-producing, than in the hands of another.

In extensive technical operations, such as the removal of tumors requiring resections of intestines. in certain cases of gastro-enterostomy with entero-enterostomy, in ureteral and in any other time-consuming, exacting technics when no special contraindication exists. morphin-ether anesthesia is used, ether during the abdominal incision, and the exploration and development of the operative field, and morphin alone with slight or no ether accessory during the technic proper, then ether again in closing the abdominal wound.

The region around the diaphragm and the large splanchnic trunks, as in operations for common duct gall stones, operations on the head of the pancreas, etc., is especially shock producing.

The expiratory moan in these upper abdominal operations near the diaphragm may deceive the anesthetizer and mislead him into giving excessive anesthesia. This is entirely analogous to the inspiratory moan while working on the sigmoid or rectum in pelvic operations, or divulsing the sphincter ani. Manipulation in the

peritoneum other than the latter mentioned areas, especially if rough or extensive, may cause an expulsive action, a powerful action tending to force out the bowel by definite straining phenomena. The greater the surgeon's efforts at returning the intestine the greater the mechanical stimulation, and so the greater the expulsive response, which in turn stimulates the operator to greater effort, completing a physiologic vicious circle, which, when once started, continues until either the reflex or the operator is overcome. In acute peritonitis this state is most likely to occur.

In anemias, cachexias and acute infections, a most careful physiologic invoice of the available vitality is made, and a procedure requiring an expenditure falling within such limit is chosen. In illustration, in cases of acute cholecystitis, in deep toxemia, in subjects varying from 36 to 96 years, by a cocain-morphin, or a cocain-morphin-gas anesthesia, a simple opening for drainage was made. After the acute stage had passed, in two cases, under gas or gas and ether, better drainage was provided and in one an impacted stone was removed. All recovered.

The same plan has been repeatedly employed in pelvic and appendiceal abscesses, and in one instance in an abscess in the lesser peritoneal cavity caused by a perforating duodenal ulcer simple drainage under cocain was made and later a radical operation was successfully done. Operative treatment by a process of physiologic progression is not infrequently demanded.

In operations on the pelvic organs we are impressed that this area is somewhat less shock producing than equally extensive dissections above the pelvis.

EXTREMITIES.

The prevention of shock in operations on the extremities has resolved itself into two or three simple propositions, the minimum loss of blood, the minimum manipulation and force, and the "blocking" of the nerve trunks by intraneural injections of cocain or eucain.

In considering the first proposition, surgeons will succeed by individual methods. I have within the past two years adopted the plan of direct dissection, using for the soft parts precisely the same instruments as for a breast amputation. The smaller vessels are secured in passing and a dry field is maintained. The large nerve trunks are exposed as early as possible and "blocked." The larger vessels are ligated and divided as they are reached. Great care is exercised in so dividing the tissue that any further revision is not required. The bone is divided by means of a Gigli saw, obviating the heavy manipulation of retraction of the entire stump when a plain saw is employed.

As an example, in intrascapulo-humeral amputations by first exposing the subclavian artery and vein and the brachial plexus through the same incision each trunk of the plexus is "blocked," the artery and vein are then secured and the skin incision of the part supplied by the cervical nerves is then made. The anesthetic may then be withdrawn, as the major field remaining has been anesthetized by the physiologic "blocking" of the brachial plexus—not only anesthetized but rendered shockless. As no impulses of any kind can pass either upward or downward, there is no more shock in dividing the tissues, even the nerve trunks thus "blocked," than in dividing the sleeve of the patient's coat.

Blood-pressure observations by means of a sphygmomanometer during such operations entirely substantiate this statement. After the effect of the "block" wears away, however, impulses pass up from the injured nerves just as after amputation by any other method, but the vasomotor centers have been protected against their greatest dangers and can better tide over the crisis.

Since my original publication of the peculiar property of cocain, whereby shock-producing impulses were "blocked" in the large nerve trunks, Matas, Cushing, Gibbon, Lund, Cobb and others have confirmed its value.

SUMMARY.

Every tissue and organ has a more or less individual shock-producing value and must be individually considered. The amount of shock produced by a given trauma varies according to the amount and special quality of nerve supply involved and the number and intensity of the afferent impulses originated by the injury or operation.

Cocain or eucain may wholly "block" these shock-producing impulses. When one or more of the accessory causes of shock are present the highest possible tax is laid on the surgical judgment of the operator. A precise technic offering a minimum of exposure and trauma, grafted on a comprehensive grasp of all the factors entering into the operative consideration, are the ideals for which we must strive.

THE ANTAGONISM OF THE OVARIES AND THE THYROID.—C. Parhon and M. Goldstein (*Archives Generales de Medicine*) review the subject of the relations of the ovarian and thyroid secretions and maintain that a very marked physiologic antagonism exists between them as regards their action on the organism. In support of this opinion they refer to the increase of the thyroid gland as frequently observed at the menopause; the facts that the thyroid seems to favor the normal growth of the osseous system, as shown by its defective development in myxedematous cases, and the contrary action of the ovaries in osteomalacia, as shown by the good effects of castration in that disease; the evident antagonistic action as regards the adipose development, the thyroid secretion being an anti-fat agent, and the normal ovarian functions tending, to a certain degree, toward the growth of adipose tissue. The thyroid favors the growth of hair, which is suppressed to some extent by the influence of the ovaries, as shown by the appearance of hairy growths at the menopause, and their action is also contrary as regards the effects on the circulatory system, the thyroid accelerating the pulse and increasing tension, while the ovarian secretion, they claim, has the opposite effect. They also find similar antagonisms in the regulation of the secretions, in the nutritive metabolism, the output of urates, phosphates, and chlorids, and the elimination of calcium, arsenic, and iodin. The therapy of Grave's disease and chlorosis is also brought into the argument, both being considered by the authors as dependent, at least in many cases, on exaggeration or perversion of the thyroid functions. The question as to whether there exists a similar antagonism between the testicles and the thyroid is suggested as one deserving special study. The authors consider that many facts, such as the effect of castration on the bony growth and the hairy development when performed on young individuals strongly point toward such antagonism.

Special Article

IMMUNITY.

CHAPTER XVII.

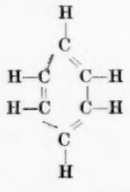
THE SIDE-CHAIN THEORY OF EHRLICH AND ITS RELATION TO THE THEORY OF PHAGOCYTOSIS.

Ehrlich,[1] in 1885, before the discovery of toxins and antitoxins, before there was any knowledge as to the real nature of immunity, and before he had become actively interested in its study, published a small volume on the "Oxygen Requirements of the Body." Herein the belief was expressed that the assimilation of foods by cells is accomplished only after chemical union has taken place between the food substance and some constituent of cellular protoplasm. It is not the understanding that assimilation is at an end, however, when this union has occurred, for certain molecules of complex chemical nature and of great size must be split up into simpler substances before they enter into the composition of protoplasm. Therefore, the cell constituent which combines with the nutritious molecule serves only as a link to bring the foodstuff into relation with the digestive, oxidizing or fermentative activities of the cell.

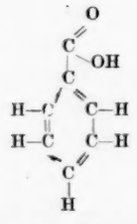
"Leistungskern" and Side-Chains.

Ehrlich speaks of that portion of living protoplasm which represents the cellular activities as the *"Leistungskern"* of the cell, the center of cellular activity, or the central group of protoplasm, whereas those chemical groups which bind the food substances are called the side-chains of the *"Leistungskern."*

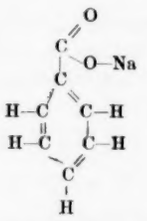
The author of the theory has made his conception somewhat more tangible through an analogy which was drawn with the so-called ring or nucleus of benzol and its side-chains. The molecule of benzol, C_6H_6, has a definite formation in which each carbon atom is linked to two others in such a manner as to form a ring; three valencies of each carbon atom are satisfied in this way, and the fourth is satisfied by atoms of hydrogen, one of which is attached to each carbon atom, thus:



This ring is analogous to the *"Leistungskern"* of the cell. A great variety of chemical compounds exists and very many may be produced synthetically by substituting for one or more atoms of hydrogen, one or more other groups of atoms which may be very simple or very complex. The groups which have been substituted are called side-chains. Thus benzoic acid is formed from benzol by substituting the acid radical COOH for a particular H, and the COOH in this instance is a side-chain of the ring:



Just as the side-chains of the *"Leistungskern"* may combine with food particles, so may the side-chains of the benzol ring combine with other groups of atoms and thereby assimilate the latter, so to say, into the ring. To choose a simple example, the sodium of sodium hydroxid may unite with the side-chain COOH to form sodium benzoate, the hydrogen of the acid radical being replaced by the sodium, thus:



Presumably it is in some such manner as sodium is brought into relationship with the benzol nucleus, in the example cited, that the food substances are brought into relationship with the *"Leistungskern"* of the cell.

Haptophores.

The hypothesis of Ehrlich carries with it the assumption that the side-chains of a cell possess or consist of definite groups of atoms capable of uniting chemically with certain other definite groups of atoms in the food particles; that is to say, the food substances also have combining groups—haptophores. The side-chains of the cells Ehrlich now calls receptors, elements which we have already recognized in connection with immunity. Inasmuch as different foods have different chemical compositions, it is likely that their binding groups are not identical; and if this be true there must exist many kinds of receptors each of which is able to unite only with that food substance which has a corresponding binding group of atoms.

In contrast to the condition with respect to foods, it is held that chemical substances of known composition, drugs and alkaloids never become incorporated as a part of the protoplasm, that is, they do not unite with cell receptors, although they may affect the vitality and function of protoplasm profoundly. Their inability to yield antibodies as a result of immunization is supposed to depend on this condition. Such substances, according to Ehrlich, exist in the cell in a condition of unstable salt formation with some constituent of the protoplasm, or in a state of solid solution.

The following statement from a recent publication by Ehrlich summarizes the nutritional aspect of the theory: "We must assume that all substances which enter into the structure of protoplasm are fixed chemically by the protoplasm. We have always distinguished between assimilable substances which serve for nutrition and which enter into permanent union with the protoplasm, and those which are foreign to the body. No one believes that quinin and similar substances are assimilated, that is, enter into the composition of the protoplasm. On the other hand, the food substances are bound in the cells, and this union must be considered as chemical. One can not extract a sugar residuum from cells with water but must first split it off with acids in order to set it free. But now such a chemical union like every synthesis, demands the presence of two binding groups of maximal chemical affinity, which are suited one to the other. The binding groups which reside in the cells and which bind food substances I designate as side-chains or receptors, while I have called those of the molecules of foodstuff the haptophorous groups. I also assume that protoplasm is endowed with a large series of such side-chains, which through their chemical constitution are able to bind the different foodstuffs and thereby provide the prerequisite for cellular metabolism."

Side-Chain Theory of Immunity.

If the side-chain theory of nutrition is to become the side-chain theory of immunity it is necessary that it undergo elaboration in order that the formation of antibodies may be adequately explained. If, as Ehrlich assumes, the union of toxin with cell receptor is analogous to the union of food substances with similar receptors, one may wonder that antibodies are not formed for our ordinary foods, antibodies which would be discharged from the cells and which would unite with circulating nutritious particles and thereby bring about a condition of starvation. Without entering into the intricacies of this question, it seems probable that normally a condition of physiologic equilibrium exists between the food substances on the one hand and the cellular activities on the other, so that the union of food with protoplasm constitutes no abnormal stimulus to the *"Leis-*

1, Sauerstoffbedürfnis des Organismus.

tungskern" of the cell. When, however, cells are diverted from their normal metabolic function by union with toxins and other abnormal "food substances," the result on the cell is described as a cell defect, the defect consisting of the functional elimination of the receptor. The "*Leistungskern*" as the vital or regulating center of the cell repairs the defect by the formation of new receptors, and in harmony with the hypothesis of Weigert produces not only enough to repair the defect, but a great excess, with the result that many are thrown into the circulation. The analogy of the "*Leistungskern*" with the benzol ring can not be carried to this extent, for the latter has no power of reproducing side-chains to take the place of one which has been bound by some new group of atoms.

It will be appropriate in this place to consider the character of the proof which has been offered in support of the three tenets which constitute the framework of the theory of Ehrlich. These three tenets may be expressed as follows: 1. Antitoxins counteract toxins by entering into chemical union with them; a similar union takes place between other antibodies and their homologous substances. 2. Toxins in injuring cells combine chemically with a definite constituent of the protoplasm, the cell receptor; other antigenous substances[2] enter into similar union with the appropriate receptors of cells. 3. The specific antibodies of the serum are new formed receptors identical in structure with those which, as cell constituents, had combined with the homologous antigen.

Tenets of Ehrlich's Theory.

First tenet: In the early days of studies on immunity (1890-1897), the action of a toxin and the efficacy of an antitoxin could be determined only by injecting these substances into living animals, and the animal experiment naturally continues to be the means of testing the curative and prophylactic value of serums. So long, however, as such experiments were performed exclusively in the living animal the nature of the action of antitoxin remained to a certain extent in doubt. It remained uncertain whether antitoxin is protective because it actually destroys the toxin, because neutralization of a chemical nature occurs, or because in some manner it increases the resistance of the inoculated animal. In Chapter IX experiments were cited to show that antitoxin does not destroy the toxin, and this is generally admitted to-day. There continues to be some difference of opinion, however, in relation to the other two possibilities, i. e., as to whether antitoxin combines chemically with toxin, or is efficacious because of its stimulating power on the tissues of the animal. Behring, the discoverer of antitoxin, was from the beginning an exponent of the chemical theory, even at a time when the conceptions of Ehrlich had not been fully developed. On the other hand, certain noted investigators, especially Roux and Buchner, and later Metchnikoff, stood for the alternative view.

Union of Chemical Antibodies with Antigens.

Following closely on Behring's great discovery Ehrlich studied the hemagglutinating toxin ricin, from the castor-oil bean, and by immunization with it produced a specific antitoxin, i. e., antiricin. Ricin is toxic to erythrocytes both in the animal body and in the test-tube, and if it could be shown that antiricin protects in the test tube by a direct effect on the toxin, it was highly probable that its action in the animal body would be of a similar nature. It was, of course, possible that the antitoxin might increase the resistance of the erythrocytes through some effect on them, but this possibility was eliminated, supposedly, by first treating the corpuscles with certain chemicals. The results left no doubt in the mind of Ehrlich that antiricin unites chemically with ricin, and the applicability of this principle in animal experiments became all the more apparent when it was shown that the proportion of antiricin which protects *in vitro* also protects *in vivo*.

Ricin and Antiricin.

It is held that similar proof of chemical union between bacterial hemolysins, the hemolysin of venom and the leucocidin of the staphylococcus with their respective antitoxins is equally valid. Although the animal body can not be dispensed with in testing the action of the antitoxins of diphtheria and tetanus, certain principles of chemical action are found to prevail which leave no doubt in regard to the chemical neutralization of the toxins. If neutralizing proportions of diphtheria toxin and antitoxin be mixed in a test tube and injected immediately, the serum does not afford absolute protection; if, however, the mixture is allowed to stand for from fifteen to twenty minutes before injection, the protection is absolute. This alone would point to an action of the antitoxin on the toxin, for the completion of which a certain amount of time is required. For the complete neutralization of tetanus toxin by its antitoxin about forty minutes are necessary at ordinary temperatures. Then certain other chemical principles described in Chapter IX are found to hold true: That neutralization proceeds more rapidly at higher than at lower temperatures, more rapidly in concentrated than in dilute solutions, and that it takes place in accordance with the law of multiple proportions.

Chemical Neutralization of Toxins.

Granting, then, that neutralization of toxin by antitoxin is of a chemical nature, the first essential step in the chemical or side-chain theory is established. If antitoxin combines chemically with toxin, union must occur through combining groups which each molecule possesses. Herein lies the experimental justification for assuming the existence of haptophorous groups.

The situation is more difficult in regard to the union of agglutinin and amboceptors with their homologous receptors. One can not titrate bacteria against agglutinin or bactericidal amboceptors so exactly as toxin can be titrated against antitoxin, for, in the first place, it is difficult to obtain at will a desired concentration of bacteria and to keep it without alteration, and, in the second place, bacterial cells contain many more receptors than are necessary for their agglutination and solution. A given mass of bacteria will take up varying quantities of agglutinin, depending on the concentration of the latter, and the same principle applies to the absorption of bactericidal and hemolytic amboceptors. As more and more agglutinin is added, the total amount absorbed increases with each addition, although the ratio of absorbed to unabsorbed agglutinin grows less continuously. The conditions which govern this phenomenon are not understood, although it has been suggested that the law of mass action explains it. Perhaps no condition speaks more decisively for chemical union of these bodies with cell receptors than immunization experiments which were carried on with cells which had been treated with a great excess of the specific antiserum. The assumption was made that if one could force all the receptors of erythrocytes, for example, to take up the specific amboceptors, such corpuscles should lose their power to cause the formation of hemolytic amboceptors when injected into a suitable animal. This would follow logically, for the receptors of the corpuscles, being already bound, would not be free to unite with receptors of the immunized animal. Antibodies were not formed under these circumstances, from which it is concluded that the receptors of the erythrocytes had united chemically with the antibodies of the serum (Sachs). In order to completely occupy all the receptors of the vibrio of cholera Pfeiffer used 3,000,000 to 4,000,000 times the dissolving amount of the anticholera serum. Although the mere absorption of agglutinins and amboceptors by the homologous cells is cited in favor of the chemical hypothesis, we may bear in mind the contention of certain investigators that this absorption is physical rather than chemical.

Union of Agglutinin and Amboceptors with Receptors.

Second tenet: What evidence have we that toxins and other antigenous substances enter into chemical union with cell receptors it is probable that no observation speaks more strongly in favor of such union than a famous experiment of Wassermann's in which the central nervous system of guinea-pigs was ground up with tetanus toxin, the mixture allowed to stand for a short time and

Chemical Union of Toxins and Antibodies with Cell Receptors.

2. An antigen or an antigenous substance is one which is able to cause the formation of an antibody.

then injected into mice. The mixture was found to be non-toxic, and further experiments showed that the neutralizing power resides in the solid tissue in the emulsion. It is claimed by Ehrlich that this experiment demonstrates positively that chemical union of tetanus toxin takes place with constituents of the nervous tissue. The toxin having been completely neutralized can not again be extracted from the tissue. The condition is the opposite in relation to some poisonous alkaloids, as strychnin, which it appears does not combine with the protoplasm firmly and may again be extracted by simple methods.

Von Dungern conducted very important work with the precipitins, which is interpreted as showing that albuminous substances other than toxins are taken up chemically by the cells. He injected considerable quantities of a foreign serum into the veins of rabbits and studied its disappearance from the blood of the injected animal. Traces of the foreign serum could be recognized by treating the rabbit serum with a specific precipitin for the former, the precipitin having been obtained previously by the immunization of other animals. The foreign serum disappeared from the circulation of the rabbit with some rapidity and since it could not be demonstrated in the excretions, it seemed necessary to assume that it had been bound by the cells, that is to say, by the cell receptors.

(To be continued.)

Clinical Reports

CASE OF TETANUS, WITH RECOVERY FOLLOWING OPERATION.

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WASHINGTON, D. C.

The approach of the Fourth of July and the interesting editorial in THE JOURNAL, June 10, on the treatment of tetanus prompt me to submit a brief history of a patient operated on by me in Gouverneur Hospital, New York City, in the fall of 1885. The case was fully reported in a paper read before the Society of the Alumni of Bellevue Hospital shortly afterward, and was, in fact, among that society's earliest papers.

It was my belief at that time that tetanus was due to a peculiar type of infection in wounds, and that the result of the infection was an "irritation" to the nerve filaments supplied to the wound, and that this "irritation" was carried through the nerves to the cord, which, in turn, manifested the extent of transmitted "irritation" by the character of the tetanic convulsions developed. The discovery of the tetanus bacillus by Nicolaier in 1884 was not known to me at that time. The treatment in this case was planned in accordance with the foregoing theory of the origin of this disease.

Patient.—Male, aged 23, a carpenter by trade, while at work on an outside window frame, had an epileptic seizure, fell to the ground and sustained a contused wound, high up in the occipital region, on the right side. The wound was dressed at a dispensary and appeared to do well for three or four days. On the fifth day I saw the patient at his home, when he showed marked stiffness of the muscles of the neck and trismus, and while I was removing him to the hospital he had his first convulsion, a typical opisthotonos. The convulsions rapidly increased in frequency and severity and bade fair rapidly to exhaust him. The case appeared to be pronouncedly acute and hopeless.

Treatment.—The patient was anesthetized with chloroform, the entire scalp was shaved, and the wound, which was about the size and shape of a half-dollar and infected, was curetted and cleaned out down to the bone with knife and scissors. This cavity was packed with gauze saturated with a solution of carbolic acid. The supposed source of the "irritation" was in this way removed. The nerves—the channels by which the "irritation" was supposed to reach the cord—were completely cut off from the wound area by a liberal V-shaped incision, angle downward, carried to the bone, and extending well beyond the site of the injury. The arms of the V-shaped wound were packed to the bone with gauze soaked in a weak solution of cocain to relieve the proximal ends of the nerves from supposed "irritation." In addition, the patient was treated symptomatically with particular attention to catharsis and nourishment.

Result.—Most surprising results followed this treatment. Within twenty-four hours the convulsions became decidedly less exhausting and less frequent and by the tenth day had practically ceased. On the fourteenth day, however, while turning over in bed, the patient accidentally touched the slats of a shutter, and bright sunlight fell on his face, bringing on a tetanic seizure, his last, which nearly cost him his life. He made an uninterrupted recovery, stiffness of the jaw persisting for some days, however.

As the absorption of the cocain solution could not be controlled, its use was discontinued after a few applications and a moist antiseptic dressing was substituted.

In a region where the division of nerves is of comparatively little moment I believe the foregoing plan of treatment is indicated, supplemented by the use of antitoxin in the spinal canal, beneath the skin, and in the wounds in place of the cocain solution as employed by me.

The necessity for collecting the scattered notes of cases justifies this brief report.

TRANSPOSITION OF THE VISCERA (SITUS TRANSVERSUS).

W. J. ZALESKY, M.D., AND W. A. ANGWIN, M.D.,
Assistant Surgeons, U. S. Navy.
ANNAPOLIS, MD.

Cases of complete transposition of the viscera are still rare enough to be classed as curiosities and each case reported is of interest if only because of that fact. We have the following case to add to the list:

***Patient.*—J. W. B., U. S. Navy, native of Texas, aged 18.**

History.—Parents are both living and in good health; two brothers and one sister are living, also in good health, and with all viscera in normal position. The patient has had all the diseases of childhood, from which he made a good recovery. At the present time he is well built, strong and active, and able to do any kind of work and stand any hardship in the curriculum of a naval training. His condition was first noticed by one of the naval medical officers while on recruiting duty, and before whom the patient appeared for physical examination. Being physically strong, and in the best of health, this transposition could in no way interfere with his appointment to the navy.

Examination.—Inspection shows a marked apex beat in the right fifth intercostal space, two and one-half inches from the sternum. The chest is well formed, and the right testicle is suspended lower than the left one. Percussion shows heart dullness on the right side, but liver dullness increasing and extending to the left side, with diminished liver dullness on the right side. The percussion area of the heart on the right and the liver on the left side is identical with that of a normal person on the respective opposite sides. Splenic dullness and stomach resonance are found to be on the right side instead of on the left. X-ray examination confirms the physical examination, the beating heart being easily seen occupying the right side of the chest. Reasoning from analogy, the appendix is on the left side, and the sigmoid flexure on the right. Curious to note, in addition, is the fact that the patient is right handed, but whether from training or not we are unable to find out.

United States Naval Academy.

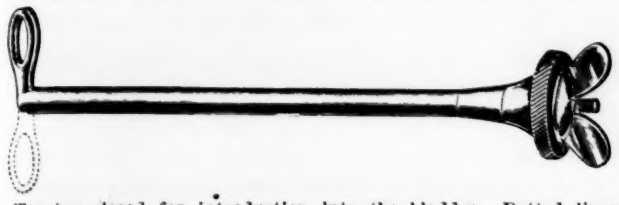
New Instruments

A NEW PROSTATIC TRACTOR.

M. R. BARKER, M.S., M.D.
CHICAGO.

The tractor is introduced closed into the bladder, through a slit in the membranous urethra, and is then opened by turning the thumb-screw five or six times to the left. Then slide the

large nut back to the thumbscrew, and hold it with the right hand while the shaft is turned to the left with the left hand until the groove on the nut is in line with the groove on the shaft. Then slide the large nut back to its place and lock by turning the thumbscrew to the right. The end of the tractor is now elevated and the instrument is used as a lever; the pubes being the fulcrum of the lever and the prostate the body moved. This maneuver brings the broad flat surfaces of the blades of the instrument in contact with the bladder



Tractor closed for introduction into the bladder. Dotted lines show the tractor open after being introduced into the bladder.

wall through which the force must be applied to the prostate. The tractor is taken apart for cleaning by simply removing the thumbscrew.

The advantages of this instrument are as follows: It is easily understood and manipulated. It can not get out of order. The danger of injuring the bladder wall is reduced to a minimum.

4625 Greenwood Ave.

PISTOL-GRIP NEEDLE FORCEPS FOR ABDOMINAL SURGERY.

EDGAR CALVIN SEIBERT, M.D.
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ORANGE, N. J.

The placing of sutures in the deeper regions of the abdominal cavity has always been a matter of especial difficulty in abdominal surgery. Owing to the prevailing straight construction of needle forceps, the operator's hand not only must be held at an uncomfortable angle, but also greatly obscures his vision.

For surgical work in the nasal, aural and vaginal cavities, great advantage and perfect visual control is derived from the use of curved or angular instruments.

Having this in mind, I have had constructed a "pistol-grip" needle forceps whose jaws are at an angle of thirty degrees to the handles, which permits a full unobstructed view of the operative field and gives perfect control of the needle even in the deeper and less accessible regions of the abdomen.

In order to provide the power necessary to hold the needle securely, two levers are used, one acting on the other, thus greatly increasing the grasping force of the jaws. Consisting of only four parts which are simple and easily detached, the instrument is readily made aseptic. The jaws have serrated surfaces which are best adapted to grasp straight or curved intestinal needles in any position. A later model has more fully curved handles which give a broader grasp and a better purchase to the hand. French locks on both joints afford additional strength and security. The spring lever for the little finger which opens the catch has a rough serrated surface which guards against slipping of the finger.

This instrument, because of its angle, will be found especially valuable for operations on the stomach, gall ducts, pancreas, kidneys and ureters, and intestines; and particularly so in bringing together peritoneal surfaces after removal of organs in the pelvic cavity. It is equally useful in operations on the cervix and vagina or, in fact, wherever the depth of the operative field makes a full unhampered view of all procedures desirable or necessary.

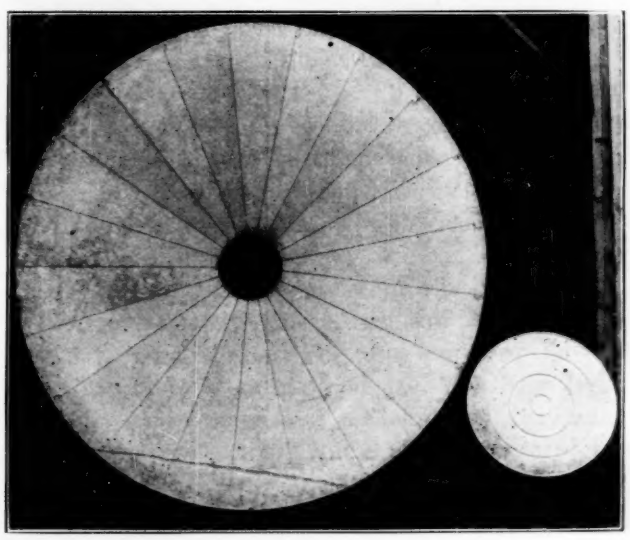
PRELIMINARY ANNOUNCEMENT OF A NEW INSTRUMENT TO BE USED IN PHOTOTHERAPY.

J. W. KIME, M. D.
Superintendent Boulder Lodge Sanatorium for Tuberculosis.
FORT DODGE, IOWA.

During the past six years in which I have made use of light in the treatment of tuberculosis in its various forms I have constantly felt the need of a much more intense light than any that has yet been produced.

I believe that it is impossible to obtain a light from any source, except the sun, that is sufficiently powerful to accomplish what we desire in this direction. The electric arc light is exceedingly limited, but, with the sun as our source of supply, the amount of light is unlimited, and that which we may utilize depends wholly on the size and construction of the apparatus used to gather up the light.

The illustration shows the mirror which I now use and the relative proportion of one now nearing completion. The smaller is three feet in diameter and contains an area of seven



square feet, while the larger has a diameter of ten feet and contains an area of seventy-eight square feet. It is so constructed that all the light falling on the entire surface is concentrated on an area of one-fourth of one square foot. In this manner, sunlight is piled up to an intensity three hundred times that of ordinary sunshine.

Such a light would ordinarily be accompanied by heat of corresponding intensity. Provision has here been made for the absorption of this heat, leaving the light in its full strength by passing the concentrated sunlight through twelve inches of cold water which is flowing through a cooling tank with plate-glass sides.

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EXPERIMENTAL INOCULATION OF MONKEYS WITH SYPHILIS, LEPROSY AND TUBERCULOSIS.

In order to study disease in detail, especially those due to pathogenic organisms, experimental reproduction in animals is of the greatest importance. A brief consideration shows at once that, on the whole, those diseases that may be reproduced in animals are far better understood and controlled than those which can not thus be transmitted. It is, therefore, with much interest that we note the further success attained in the experimental inoculation of monkeys with syphilis.

In their last report, Metchnikoff and Roux[1] describe their further experiments in this fertile field. Altogether they have inoculated ten chimpanzees with syphilitic virus from various sources and have obtained positive results in all cases. Successful results were obtained by using material from secondary lesions of the disease, as well as from the primary lesion, and one chimpanzee has been successfully inoculated from lesions of another, thus establishing the possibility of transmission from animal to animal.

The incubation period varied in these experiments from twenty-two to thirty-seven days. Some days following the primary lesion adenopathy developed in a characteristic manner and the investigators also obtained typical mucous patches on the tongue in one instance. Smaller monkeys were successfully inoculated with the virus, and attempts have been made to produce antibodies and also to obtain a vaccine, but so far the experiments in this respect have been negative. The fact, however, that successful inoculation may be obtained with these smaller animals is of great importance, in that material for further work along this line may be comparatively easily obtained and thus greatly increase the number of investigators.

Metchnikoff and Roux were also able to demonstrate that the virus of syphilis does not pass through a Berkfeld filter, which allows the organisms of peripneumonia to pass, indicating that the virus in all probability exists in molecules large enough to be seen if only the proper technic is employed. They were also able to show that the virus is killed by exposure to 51° C. for one hour, and that glycerin does not destroy its pathogenic power. These facts enabled them to attempt an attenuation of the virus for purposes of vaccination, but the few experiments so far made have resulted negatively.

The importance of this work on syphilis can scarcely be overestimated. Here is a disease recognized as one of the most widespread scourges of the world, and about which practically nothing is known so far as etiology is concerned. Suddenly, largely through the work of these French investigators, this disease has been brought within the realm of experimental medicine, and certainly we expect our knowledge of the disease to be greatly extended within a short period of time.

In this connection it is of interest also to note that an apparently successful attempt has been made to inoculate monkeys with leprosy. Nicolli[2] inoculated into monkeys (*Macacus sinensis*) fragments of leprous tissue and obtained, after a period of incubation of sixty-two days, nodules which have the characteristics of human leprous nodules. The bacillus of leprosy was found in the nodule by suitable staining methods in rather small numbers. None of the large leprous cells filled with enormous masses of bacilli, which appear in the human, was seen, this really being the only difference observed between the nodules in man and in the inoculated animal.

Further experiments are in progress along much the same lines as those being carried on with syphilis. We, therefore, have good reason to hope that this disease, about which so little is known, will also become accessible to experimental research.

It is well known that monkeys are very susceptible to tuberculosis and this fact has been taken advantage of in attempting to determine the relation of bovine to human tuberculosis. Because they are more closely related to the human being zoologically than any other animal, the experimental results obtained with them are, for that reason of greater value than results obtained with species farther removed from man, and because of the impossibility of inoculating the human species with the bacilli; the inoculation of monkeys furnishes the most direct experimental evidence possible on the question of the transmissibility of bovine tuberculosis to human beings.

De Schweinitz, Dorset and Schroeder[3] recently succeeded in producing generalized tuberculosis in seven monkeys by both feeding and inoculation experiments, using tubercle bacilli of both human and bovine origin. They conclude from this, and also from other evidence, that there is every reason to believe that bovine tuberculosis is communicable to man, and that the only difference between tubercle bacilli of human and bovine origin is one of virulence. Nocard, Cipollina and others have obtained similar results.

These experiments with monkeys indicate the important rôle these animals may play in experimental work in the future.

1. Annal. Past. Inst., vol. xviii, No. 11.

2. Comptes Rend. Acad. Sciences, vol. cxi, No. 8.

3. U. S. Department of Agriculture, Bureau of Animal Industry, Bull. No. 52, Part II.

THE SOCIAL TRAINING OF THE PHYSICIAN.

Education is something more than the accumulation of facts. True education, along any particular line, involves more than the perusal of certain texts or attendance on a course of prescribed lectures or demonstrations. Training for any particular calling or vocation, to be of the highest utility, should include all lines which are necessary for the attainment of success. This necessitates instruction not only in the theory and principles, as well as the technic of one's future work, but also should involve training in regard to those future relations to one's fellows which are often of more importance to progress and success than exhaustive knowledge and precise technical ability. These self-evident truths were recognized, years before the development of modern psychology and pedagogy, by the United States Government, in the management of West Point and Annapolis. At these two academies, which have stood for years as models of what technical institutions should be, the young cadet, as a future officer of the army and navy of the United States, is taught not only mathematics, chemistry, military tactics and gunnery, but riding, swimming, fencing, boxing and dancing, French, German and Spanish as well. The fact is recognized that each graduate must have all the training that is necessary to enable him to meet and to associate not only with other officers of the army and navy of his own country, but with military and naval officers of any other country.

The enormous increase of detail in all scientific and technical lines in the last twenty-five years, has so broadened the field of modern education that practically all of the student's time is occupied in acquiring data for his future work. This is particularly true in medicine. Necessitated by the rapid increase of medical knowledge, the course has been lengthened from two to three and then to four years. It is still inadequate and five year courses are now being planned; and yet the modern medical student does not receive as much instruction on medical ethics and professional etiquette as did his predecessor of thirty or forty years ago. He leaves his alma mater, an individual instructed in the latest results of scientific research, but still an isolated individual, with little idea of his duties as a member of a profession or of his responsibilities, either to his brother practitioner or to his lay neighbor.

In no other way can we account for the apathy among the young men, the recent graduates, in regard to professional ethics and medical organization. The existence of this indifference has been noticed in both country and city and in different localities. In the organization columns of this issue, will be found an article by Dr. J. N. McCormack, on local conditions among the medical profession in Pennsylvania. In enumerating the difficulties encountered in this, one of the oldest states in the Union, from the standpoint of medical organization, Dr. McCormack emphasizes the apathy and indifference of the young man in the profession as one of the greatest obstacles in the way of successful organization. He clearly points out that the student of to-day, practically without exception, leaves his college with no adequate training for his future work, so far as his relations to his fellows and his duties to society at large are concerned; and yet every successful practitioner knows that these are at least as great, if not greater factors, in winning success, as are technical training and exhaustive knowledge of scientific facts. It is also a well recognized fact that the standing and influence of the medical profession depend on the material success and financial independence of its members. A poverty-stricken and ill-paid profession can never wield the influence for its own good and that of the community at large, that could be exercised by an independent, self-respecting, adequately paid profession.

Instruction in all those factors that make for the highest success, is the right of every medical student and should be the duty of every medical teacher. Necessarily, instructors in medical schools are drawn from the ranks of successful, and therefore, busy practitioners. They are not experts in pedagogy nor in sociology, yet they can profit by the results of modern thought and development along educational lines. We need, in our medical schools, not less fact or less practical instruction, but more instruction of the future physician in regard to his duty to the profession at large and to its individual members, as well as his duty as a citizen-physician. An adequate course of lectures, to senior students, given by some broad-minded and experienced member of the faculty should be on every medical college schedule. Not only medical ethics and the etiquette of intimate professional relations, but medical organization and the advantages of co-operation, as well as the peculiar duties of the physician as a member of modern society, should be carefully and earnestly discussed. Then the young and inexperienced graduate could begin his professional career, with that conception of his professional responsibilities and duties that is indispensable to true success.

THE DIAGNOSTIC SIGNIFICANCE OF THE BABINSKI TOE PHENOMENON.

One would imagine that after hundreds of years of clinical observation the signs of disease would all have been discovered. Such is not the case, for every year new diagnostic signs, and even new diseases are described. Some of these signs, after being tried and found wanting, pass back into the oblivion from which they originally emerged, others stand the test, and become incorporated into the routine of the physician. Among the latter may be mentioned the sign originally described by Babinski in 1898, and now usually referred to as "Babinski's sign" or "the toe phenomenon of Babinski." The phenomenon was originally de-

scribed by Babinski in the following words: "On the healthy side, the prick of the sole of the foot causes under normal circumstances a flexion of the thigh on the pelvis, of the leg on the thigh, of the foot on the leg, and of the toes on the metatarsus. On the paralyzed side a similar excitation gives rise also to flexion of the thigh on the pelvis, the leg on the thigh, and the foot on the leg, but the toes instead of flexing execute a movement of extension on the metatarsus."

The significance of this sign, as originally pointed out by Babinski, lay in the fact that it supplied, what had hitherto been lacking, a sure means of differentiating certain organic lesions of the central nervous system from functional lesions which closely simulated them. In hemiplegia, for example, it has always been difficult to differentiate hysterical from organic cases in some circumstances, and the character of the ordinary reflexes offered but little aid. The Babinski phenomenon, however, never occurs in hysterical hemiplegia, while at is very common in organic hemiplegia, and appears very shortly after the stroke. In differentiating between hysteria and early or atypical cases of disseminated sclerosis also, the sign is of the greatest value as Byrom Bramwell[1] has recently pointed out.

Continued study of the sign has shown, as would have been expected, that it is not so limited in occurrence as Babinski at first thought; it has been demonstrated, however, that in the main the original statements regarding the value of the phenomenon are to be relied on. It has been shown that the sign occurs normally in infants up to the age of one year, a discovery which detracts nothing from its usefulness; and also, that it may occur temporarily after various forms of convulsion, epileptic or uremic for example. Here, again, it serves to distinguish disease on an organic basis from hysteria, for it does not occur after convulsions of an hysterical nature. It may also occur temporarily as a result of tetanus or of strychnia poisoning.

Naturally there have been those who claim that the sign is inconstant, uncertain, and of relatively little value. Generally a study of the writings of such individuals will show that they have failed to carry out the technic necessary to bring out the sign, or that they have overlooked the fact that under certain circumstances it fails to appear. When the feet are cold and damp, or when the patient has been standing some time the sign may be absent. Then, again, the position of the patient may be of great importance, especially when the sign is not well marked. In typical cases the sign is easily elicited with the patient on his back and the legs extended, but in less typical ones it is necessary to have the patient lying rather toward the side to be tested, with the thigh and leg both flexed to about a right angle, and the outer surface of the limb resting on the bed. Then, again, the degree of plantar stimulation which is necessary varies in different cases; in general, stimulation of the outer part of the plantar surface or of the ball of the toe leads to the best results. If every precaution be taken in performing the test, and with all precautions it is not a difficult one, good results are bound to be obtained. So far the use of the test has been too much limited to the neurologists, but it is so simple, and gives such valuable information, that it is to be hoped it will be more extensively used by the general practitioner.

1. Clinical Studies vol. iii, part 3, 1905.

THE PROPHYLAXIS OF FOURTH OF JULY TETANUS.

In a previous editorial we discussed the important work that physicians can and should do in suppressing the annual Fourth of July nuisance through legislative and educational measures. This is the most hopeful way of striking at the root of the tetanus epidemic, and the only one which will lead to permanent results, but we are as yet much too far from the civic millenium to hope for a total suppression of Fourth of July indiscretions and injuries for many years to come. We must prepare to face a few thousand useless injuries and a few hundred unnecessary deaths, and the responsibility as to the outcome of a large part of these injuries is put on the physicians. It is unnecessary to insist that the chief danger to be feared is tetanus, which has ever shown a remarkable frequency after Fourth of July wounds. Whether tetanus is so frequent because certain blank cartridge wads contain tetanus bacilli or simply because the nature of the wound and the conditions under which it is generally received favor infection with tetanus bacilli present in the dirt of the street is a matter of minor importance when the case is at hand.

It is, then, important that every penetrating or lacerated wound received from explosions of instruments of celebration is a very possible site of tetanus infection, and also that these wounds present certain anatomic peculiarities that render their treatment no simple matter. The small, clean-cut wound in the skin made by a blank cartridge wad gives no idea of the serious nature of the destruction that has gone on beneath, and which is difficult of conception by one who has never dissected out such a wound.

Beneath the tough skin of the hand, where most of these wounds are received, the explosive force tends to spread laterally along the course of the tendons and their sheaths, so that particles of powder and dirt may be found several inches away from the site of the injury. The penetrative power of the wads is also seldom appreciated—they may pass from the palmar surface entirely through the hand to lodge beneath the skin of the dorsum; there is one case on record in which a wad passed through the abdominal wall and penetrated the intestine. Hence, the proper cleansing of a blank cartridge wound is not a simple matter, but, in general, is a proce-

dure that calls for full anesthesia and some surgical skill, a fact difficult to impress on the patient, and formerly too little appreciated by the family physician. Drainage with a strand of gauze, even if the wads have been successfully picked out of the bottom of the wound, is entirely inadequate treatment; the entire wound track must be thoroughly cleaned and opened widely to permit of free drainage, exposure to air through porous dressings, and healing from the bottom.

Last year we received, on a grand scale, a demonstration of the efficiency of tetanus antitoxin as a prophylactic. Previously, there had been several instances of the checking of hospital epidemics, or of stable epidemics among horses, by this means, but there has probably never been so large an experiment performed as this. That it was successful the figures prove beyond a doubt. We have yet to learn of a single instance in which a patient with a blank cartridge wound who received a prophylactic injection of antitoxin later developed tetanus, although there were instances enough of such wounds not so treated that were followed by tetanus. Having, therefore, an almost positive and harmless preventive of tetanus at our disposal, there is no apparent reason why it should not be used in every case of this dangerous class of injuries. Last year most of the large hospitals and dispensaries adopted this measure with the best of results. It now remains for the private practitioner, particularly in the smaller towns, to insist on the necessity for immediately securing antitoxin from the nearest source of supply. As a prophylactic dose, from 5 to 10 c.c. injected subcutaneously, preferably in the vicinity of the wound, is sufficient; the amount depending on the age of the patient, although there seems to be no danger from large quantities. If this is done universally, we may confidently expect to see the great saving of life recorded last year repeated and increased this year, with the deaths from tetanus practically limited to those whose wounds did not receive medical attention until the symptoms of the disease had already appeared.

MUTUAL MISUNDERSTANDINGS AMONG MEDICAL INVESTIGATORS.

Medical men, noted for their broad sympathies, for their charity and for their magnanimity, are human nevertheless, and have human imperfections. It must be admitted that they sometimes misunderstand their colleagues and are misunderstood by them. From time to time we hear of conflicts arising, even among medical investigators; mutual misconceptions and erroneous interpretation lead occasionally to disturbances of harmony. Let us examine a little more carefully into the nature of some of these conflicts and ascertain, if we can, how they have arisen, whether or not their existence is justified, and what steps, if any, may be taken to bring about reconciliation.

Among the tendencies to conflict observable among medical investigators a rivalry may first be mentioned between workers in biology, physics and chemistry and investigators who believe that they employ other methods in their work; second, a struggle between non-medical scientists on the one hand and medical men on the other regarding medical problems or problems related to medicine; and, third, a strife between morphologists, who study form, and physiologists, who study function. Though to a certain extent all three conflicts probably exist, the first and second, which are perhaps most noticeable, are the least significant, and the third, which may be least conspicuous, we think, is most deeply rooted. The fact that one contestant may engage not only in one but in two, or in all three of the conflicts, doubtless accounts for the fact that many find difficulty in forming a clear conception of the situation.

If one inquires into the origin of the conflicts mentioned, we think he will find that in each case the principal motive is the contestant's interest in the valuation of certain phases of knowledge—his desire for their good induces him to enter the lists in their defense. On the other hand, the chief incentives to conflict lie, we believe, in the reciprocal misunderstandings of the combatants. Further, it is possible that, occasionally, a competitor may be driven on by transitory impulses of jealousy or of envy; the enmity in the one instance being prompted by fear, in the other by covetousness. If one asks himself, if there should be such conflicts, he can not but answer in the negative; they are unconformable to common sense and no real reason for them exists.

While the motives inspiring the conflicts generally may be good, the immediate incentives thereto and the impulses concerned are too often bad. The non-medical scientist, on the one hand, sees in medicine a field in which the principles and facts of the basal sciences are capable of much more extended application than has yet been made. He is impatient that the exact and rational methods of the laboratory may quickly replace what he regards as the haphazard, empirical routine of "long-distance diagnosis" and "shotgun polypharmacy." The medical practitioner, on the other hand, sees living, suffering human beings, whom it is his duty and desire to help and to comfort, rationally if he can, but merely empirically if he must. He chafes at the criticism of the pure scientist, realizes how little, often, the latter understands more strictly medical problems; he accredits to him such general propositions as "electricity is life" and laughs at them; regards the suggestions from the laboratories as interesting in theory but sterile for practice; and resents, quite properly, the statement so frequently and thoughtlessly made, that the work of a laboratory man is scientific, and that of the practitioner is not.

Again, biologists, physicists and chemists, who work at medical problems, too often forget that the great mass of even the chemical and physical facts of the

medical sciences have been discovered by physicians themselves. It is just as true that medical men forget that the methods that they use every day are those of physics and chemistry. The conflict between the students of form and the students of function, as has been said, is probably more deeply rooted, for here the interest of each partisan is often beyond the comprehension of the other. Great morphologists, like Virchow, it is true, have appreciated the importance of physiology, and great physiologists, like Ludwig, have had a sympathetic feeling for form. Frequently, however, the investigator of structure has no great interest in function, and often the student of processes has but little sympathy with morphologic research. Two distinct and somewhat antagonistic types of mind seem to be concerned. In all these conflicts, if the reciprocal misunderstanding regarding each other's aims and work could be done away with, the main incentive to altercation would be removed. The impelling forces to hostility, we fear, can not help being active, however, at least until men cease to have the common passions; jealousy and envy will not entirely disappear so long as prestige in faculties, among students, in societies and academies, and with the laity is of influence in aiding or in thwarting ambition. It is obvious that the conflicts described are deplorable; since no right rational basis for them exists, and since, instead of them, sympathy and hearty co-operation are desirable, they should be discouraged in every way possible.

What remedies may be suggested? We can not discuss the subject fully at this time, but a few hints may suffice. The greater factor in removing the causes of conflict will undoubtedly be further education—education that will show what we have tried to show, namely, that the conflicts are unconformable to common sense. The pure scientist must learn to respect, more fully than he sometimes does, the medical practitioner. The scientist will do well to acquaint himself more intimately with the physician's problems; when he urges his methods and results on the clinician he should write and speak intelligibly to the average man and not in the jargon of those whom he regards as "the elect." The medical man, in turn, must frankly recognize his debt to the sciences fundamental to medicine. The bedside worker may as well acknowledge first as last that the methods which he can most profitably follow are those of the biologist, the chemist and the physicist; he will be very unwise if, as a student, he fail to work long enough in the sciences they represent to understand the principles and to apply them to the solutions of problems that interest him; he should welcome every new method which is given him from any source whatever, provided it can be made useful for the understanding of human suffering or for its alleviation. A similar therapy might well be recommended for the other conflicts. Broad sympathies, consideration for the feelings of others, and, above all, respect for good work of all kinds, will go far to prevent unseemly strife.

A RATHER DRASTIC SANITARY MEASURE.

A state law that has just gone into force in California makes it a misdemeanor to own, lease, let or hire any room for a lodging or sleeping apartment that contains less than 500 cubic feet of airspace "in the clear" for each occupant, and it goes further and makes it also a misdemeanor to be an occupant of such quarters. If this law is enforced there will have to be a general remodelling, not only of lodging houses in the large cities at which the measure is evidently aimed, but also of a large proportion of the private dwellings of the state. The hall bedroom will have to go, and it will not be at all surprising if the state itself is found to be an extensive offender in some of its crowded public institutions. The inflow of "lungers" into the state and the popular anti-tuberculosis agitation have evidently educated the legislators as to the importance of fresh air; the next thing is to educate the house owners and users, and that will be a somewhat larger contract, if the law is to be interpreted exactly as it seems to read.

STATE MONTHLY JOURNALS.

At its recent annual session, the Ohio State Medical Association decided to publish its transactions hereafter in a monthly medical journal that is at once to be established by the Association. The advantages of this plan over the conventional annual volume are so obvious that state after state is creating its own monthly publication.

THE OSTEOPATH'S GOAL.

The public is frequently warned that the attempt of the osteopath to secure the permission to manipulate under certain restrictions is but a stepping stone to securing the right to practice in every way that the regular practitioner does, but without first securing the qualifications that the state has demanded. In Iowa the failure of the State Board of Health to confirm the appointment of an osteopath as local health officer has aroused the fears of these semi-doctors that their death certificates will not be accepted, and this means, according to the one who sounded the alarm, the practical abolition of the practice of osteopathy in the state. If they can not sign death certificates their patients must all get well or else they will have to turn them over to regular physicians when they become moribund, as is the practice of Eddyites and other irregulars. This is unsatisfactory, because the osteopath wants to be a whole physician. We call attention in our Queries and Minor Notes department this week to some testimonials which are evidence that osteopaths are using drugs, contrary to the conditions on which they were licensed. Attention has previously been called to the use of drugs by osteopaths, and it might surprise one who had thoughtlessly accepted as a final statement of creed an "old school" osteopath's condemnation of drugs. Their prejudice against drugs will all pass away when they have been permitted to build up a new school of incompetent practitioners who, without undergoing the increasingly severe tests required by modern medical laws, can impose themselves on the confiding public as fully qualified physicians.

"THE PROFESSION OF GETTING HURT."

In *Pearson's Magazine* for June, Theodore Waters writes entertainingly under the above title about cases of malingering. Because of its excessive number of personal damage suits against the municipality, Chicago is given a "bad eminence." Not much in the article is in the least new to the well-read physician, but it is a pleasure to find that the professional malingerers are being exposed to the sympathizing and rather unsophisticated public; and undoubtedly much good will come from the education of the public perception and conscience. Mr. Waters equally and rightly exposes the "shyster lawyers and the doctors without-the-code," and condemns the benumbed conscience of the public in reference to damage suits against corporations and municipalities. He cites many instances showing the swarm of lawyers that besets every injured person whose accident is reported in the papers. Concerning Chicago, we read: "And by a curious coincidence the clients of many of these law firms have employed the same doctor." In the suits on file against the city "one doctor was found to have been in attendance in over one hundred." These statements grate unpleasantly on the ears of medical readers, but doubtless they are true. However, it is not hazardous to predict that the medical profession ere long will rid itself of this scandal. No physician will be permitted to belong to a medical society who lends himself as a tool to corrupt lawyers and unscrupulous malingerers, and the physician outside the organization soon will be in hopeless plight. The active medical society will watch these cases and make sure that the medical backslider gets his deserts. Then, a sure but slower process, the good medical schools are now graduating few men who will, under any stress, descend to this level, and very soon there will be no medical schools but the good ones. Meantime publicity is the most effective weapon against this as well as against other forms of "graft."

Medical News

CONNECTICUT.

Estate for Hospital.—By the will of the late Wolcott B. Manwaring of Baltimore, practically his entire estate, valued at about $150,000, is left to establish and maintain a children's hospital in the Manwaring homestead, New London.

Injured, Asks Damages.—Dr. Morris D. Slattery, New Haven, who was injured by being thrown from his buggy April 7, by reason of an unprotected excavation in a street, has filed a claim against the city of New Haven for the damages sustained by him, his horse and his carriage.

April Deaths.—There were 1,347 deaths during April. This was 229 less than in March, and 30 less than in April, 1904, and is equivalent to an annual mortality of 16.6 per 1,000. Nervous diseases, pneumonia, heart disease and consumption, in the order named, headed the list of death causes.

Old Practitioners Honored.—At the 113th annual meeting of the Middlesex County Medical Association held at the home of Dr. Miner C. Hazen, Haddam, the host in commemoration of the fifteenth anniversary of his entrance into practice, was presented by the association with a cut-glass and silver cigar jar suitably inscribed and filled. Dr. Gurdon Werdsworth Russell, Hartford, received many felicitations on his ninetieth birthday anniversary. He is still in active practice.

Hospital Notes.—St. Francis Hospital, Hartford, announces that its Easter donations amounted to $1,300.——The treasurer of the William W. Backus Hospital, Norwich, appeared before the house committee on appropriations with the unusual request that the institution be relieved from taking the $10,000 appropriated for its use.——St. Vincent's Hospital, Bridgeport, has had appropriated for its use $6,000 to be paid on completion of the equipment of the hospital, and after the institution has been in actual operation three months. ——An appropriation of $10,000 has been granted the Wallingford Sanatorium for Tuberculosis.——The benefit performance for the Hartford Hospital, May 29, netted more than $5,500 for the institution.——Senator H. H. Peck, Charles F. Rockwell and Charles F. Linsley have each given $500 to the Meriden Hospital.

DISTRICT OF COLUMBIA.

Hospital in New Home.—The new building of the Casualty Hospital and Eastern Dispensary, Washington, was formally opened, April 26.——Dr. Charles F. Rand has given the hospital a medical library of 160 volumes, a surgical chair and electrical apparatus.

Eye and Ear Society Officers.—At the meeting of the Society of Ophthalmologists and Otologists of Washington, May 19, the following officers were elected: President, Dr. Oscar A. M. McKimmie; vice-president, Dr. Hobart S. Dye, and secretary and treasurer, Dr. Henry A. Polkihorn.

Medical Board Decision Reversed.—In the case of Dr. Sigmund A. Czarra, Washington, the District Court of Appeals has reversed the decision of the board of medical supervisors against the appellant, holding that Congress has the power to regulate the practice of medicine and surgery in the District of Columbia and to define what shall constitute unprofessional or dishonorable conduct, but that it has failed to do so.

Commencements.—George Washington University Department of Medicine, Washington, held its eighty-fourth annual commencement exercises, May 29. Prof. Charles E. Monroe, Ph.D., delivered the address on "The Lord Protector's Motto;" Dr. William F. R. Phillips, the dean of the faculty, presented the candidates for degrees which were conferred by the president of the university. A class of 61 was graduated.——Howard University Medical Department, Washington, held its annual commencement, June 1.

ILLINOIS.

Hospital Transferred.—The grounds and buildings of St. Francis' Hospital, Blue Island, have been transferred by Rev. Francis A. Rempe to the Sisters of St. Mary of St. Louis. The property is valued at $50,000.

Personal.—Dr. James A. Egan, Springfield, secretary of the State Board of Health, has been appointed a member of the committee to inspect state military schools.——Dr. Carleton E. Starrett, Elgin, has returned from Europe.——Dr. Frank B. Lucas, Peoria, has been made physician of the township board of health.——Dr. William Hul, Bloomington, is seriously ill. ——Dr. James L. O'Connor, Arlington, who was operated on for appendicitis last week, is progressing favorably toward convalescence.

To Save the Babies.—The State Board of Health has issued a timely twelve-page circular on "Infant Feeding and the Care of the Mother and Infant," written not for the physician but for the guidance of mothers. It deals first with the dangers of artificial feeding and how these dangers may be minimized; urges the use of pure cow's milk, properly diluted and modified; gives sound advice on the care, exercise, diet and mode of life of the nursing mother, and pays especial attention to the care of the infant, the danger signals of the first year, and the necessity of cleanliness. This circular is intended for general distribution.

Chicago.

Fined for Contempt of Court.—Because Dr. George W. Boice, when subpœnaed as a witness before Judge Tuthill, gave freely to the deputy sheriff his opinion of courts, judges, sheriffs, etc., Judge Tuthill admonished him and then fined him $10 with added costs.

Fined for Improper Use of Mails.—Drs. Alice B. Stockham and Edward B. Beckwith on June 5 were found guilty of sending improper matter through the mails and were fined $250 each. In addition, Dr. Stockham was sentenced to pay one-third and Dr. Beckwith two-thirds of the court costs.

The Week's Deaths.—There were 514 deaths reported in the week ended June 10, equivalent to an annual death rate of 13.46 per 1,000. Pneumonia again takes the lead with 73 deaths, consumption coming next with 70. Among other principal death causes are the following: Heart diseases and violence, each 48, and nephritis, 46.

Erratic Weather Causes Increased Mortality.—A sunstroke in April and overcoats, wool blankets and another sunstroke in June are the sufficient explanation of the increase of mortality in one of the two most healthful months in the year. The 47 more deaths than in the previous week and the 94 more than in the corresponding week of 1904 represent increases of 10.4 and 18.4 per cent. respectively in the annual death rates per 1,000 of the population. The erratic weather is chiefly responsible for the 23 more deaths from consumption and the 24 more from pneumonia than reported during the week of June 3.

University of Chicago Faculty Notice.—It is officially announced that Dr. Nicholas Senn has been elected professor of surgery, and Dr. Frank Billings, professor of medicine in the University of Chicago, and will lecture before the respective classes at the university. Dr. Senn will have entire charge of the clinical teaching of surgery during the fall semester. Dr. John B. Murphy has been elected professor of surgery in Rush Medical College, and, with Dr. Arthur Dean Bevan, will have charge of the administrative details of the department of surgery and will conduct the clinical teaching of surgery during the remainder of the year.

INDIANA.

Going Abroad.—Dr. James E. Johnson, Marion, left for Europe June 3.——Dr. David R. Ulmer, Alexandria, has gone to Europe.

Judgment for Physician.—On June 3 a jury in the Circuit Court, at New Castle, awarded Dr. John P. Black, Greenfield, a judgment against that city of $850, for services rendered during the recent smallpox epidemic.

Health Conference.—Under the auspices of the State Board of Health, the annual conference of health officers was held at Indianapolis, June 1, 2 and 3. Drs. Joseph McFarland and Seneca Egbert of Philadelphia delivered addresses.

Injured and Operated On.—Dr. Arthur K. Hammond, in jumping from his carriage when his horse fell, was kicked on the wrist by his horse, fracturing the arm at that point.——Dr. James N. McCoy, Vincennes, was operated on for appendicitis at St. Vincent's Hospital, Indianapolis, June 9.

Personal.—Dr. John L. Puckett, Kokomo, has been made secretary of the local board of health and charities.——Dr. Samuel Harrell has been elected president, and Dr. Fred A. Tucker, secretary of the Noblesville Board of Health.——Dr. Edward P. Busse, Vincennes, has been made a member of the board of park commissioners.——Dr. T. Victor Keene, Indianapolis, has been elected superintendent and pathologist of the new State Laboratory of Hygiene, with a salary of $2,000 a year

KENTUCKY.

Will Equip Wards.—Joseph L. Friedman and John W. Keiler will each equip a ward in the Riverside Hospital, Paducah, in memory of his father.

Physician's Suit Compromised.—The suit of Dr. Theodore D. Finck, Louisville against the estate of the late Carl F. Eller, asking $7,858 for treatment of the deceased for 7 years, has been settled by mutual agreement for $1,500.

Physicians Nominated.—Dr. Lawrence C. Nell, Columbia, has been nominated for state senator from the Sixteenth senatorial district.——Dr. John A. Yates, Edmonton, has been nominated for the legislature, by the republicans of Metcalf and Monroe counties.

Must Comply with Health Regulations.—On May 24 the State Board of Health granted an extension of ten days to the authorities of Mahlenberg county, to take the proper steps to control the spread of smallpox in that county. In the event of non-compliance with the regulations, quarantine of the entire county will be declared and rigidly enforced.

Personal.—Dr. Charles C. Norman, Hawesville, is seriously ill with cirrhosis of the liver.——Dr. William A. Briggs, Bowling Green, was assaulted with brass knuckles by a negro ex-convict, breaking his nose, and sustaining severe cuts and bruises.——Dr. and Mrs. Morean S. Brown, Winchester, have started on a trip to Alaska and Hawaii.——Dr. Louis H. Landman, Covington, will go to Europe for a year, sailing in July.

Anti-Tuberculosis League Organized.—The Kentucky Anti-Tuberculosis League was formally organized on June 8, by the election of the following officers: President, W. C. Nones; vice-president, Rev. William H. Ramsey; secretary, George L. Sehon, and treasurer, Theodore Harris. A committee composed of Dr. Jacob A. Flexner, Robert W. Bingham and C. A. Adler was appointed to draft by-laws. A resolution was adopted asking every person interested in the establishment of a tuberculosis hospital to join the association, which can be done by the payment of $5. Thus far no site has been considered nor will this be done until the membership is increased.

MARYLAND.

Fire in Towson.—The house occupied by Dr. Stuart W. Cassard in Towson, was burned May 30. Insurance covered $2,500 of the loss.

Osler Memorial Number.—The issue of the *Maryland Medical Journal* for June was an Osler memorial number. It contained articles on Dr. Osler as teacher and physician and illustrations of Johns Hopkins and Oxford universities, of Dr. Osler at different ages, his residence, etc.

Protest Against Tuberculosis Hospital.—The movement by ex-Surgeon General George M. Sternberg, U. S. Army, and others to establish a sanitarium for tuberculosis at Rockville, Montgomery County, has been prohibited by the mayor and council of that town, as the citizens and physicians protested against it.

Baltimore.

Johns Hopkins Commencement.—At the annual commencement exercises of the Medical Department of Johns Hopkins University, June 13, a class of 53 received degrees.

Personal.—Dr. William Lee Howard sailed for Europe June 3.——Dr. Albert M. Wortman has been elected a member of the National Geographical Society of Washington, D. C.

Appropriate Money for Isolation Hospital.—The Board of Estimates has approved the ordinance appropriating $25,000 out of the 1906 levy for the erection of an infectious diseases hospital.

Fellows of Johns Hopkins.—The following have been given university fellowships at the Johns Hopkins University: Ernest K. Cullen, M.B., University of Toronto 1903, pathology, and John A. E. Eyster, M.D., Johns Hopkins 1905, physiology.

Hospital Reports.—The thirteenth annual report of the Evening Dispensary for working women and girls shows 1,302 new patients for the year; 369 visits to Wednesday clinics; 4,960 patients in all clinics; 2,260 visits paid to homes; 12,791 prescriptions filled; 8 major surgical operations.——Limited provision is made for surgical cases at the Church Home and Infirmary. The income of the home was $1,903; the disbursements, $1,710.

NEW JERSEY.

Opening of Sanitarium.—The twenty-fifth annual opening of the sanitarium at Red Bank, for poor children, took place June 10.

Hospital Opened.—St. Elizabeth's Hospital, Elizabeth, which was dedicated May 29, was formally opened to receive patients the following day. The institution is non-sectarian and is intended primarily for women.

Bogus Physician Goes to Prison.—Maximilian Muller, who stole jewelry worth $330 from a citizen of Newark by pretending to be a physician and taking his victim under treatment, pleaded guilty to larceny June 5, and was sentenced to imprisonment for five years.

Hospital Report.—The report of Cooper Hospital, Camden, for May shows that 1,814 patients were cared for, or an average of 59 daily; 8 patients were admitted to the wards of the hospital; 411 new cases were treated in the dispensary, and 1,291 return visits were made.

Funds for Hospitals.—At the meeting May 21, $4,236 was subscribed to the building fund of the Beth Israel Hospital, Newark.——The Board of Freeholders has appropriated $5,000 to the Perth Amboy Hospital, and the same amount to the Wells Memorial Hospital, New Brunswick.——The annual fair for the benefit of the Memorial Hospital netted nearly $10,000 for the beneficiary.

Hospital Appointees.—Atlantic City Hospital, Dr. Samuel Barbosh; Trenton Emergency Hospital, Dr. Howard W. Levengood; Trenton State Hospital, Dr. Clarence J. Slack.——Drs. Fred Sonneborn, Philadelphia; John Glick, Wilkesbarre, and Edgar L. West, Hamilton Square, have been elected resident physicians at St. Francis' Hospital, Trenton.——Dr. Victor Mravlag has been appointed consulting surgeon, and Dr. Thomas E. Dolan, visiting surgeon, at Alexian Brothers' Hospital, Elizabeth.

NEW YORK.

Addition to Batavia Hospital.—An addition is to be built for the hospital at Batavia. This is made possible by the will of the late Adelaide R. Kenney, which leaves $20,000 to the institution.

Staten Island Mosquitoes.—The war of extirmination has begun. Dr. Aloin H. Doty, of the government sanitary department, and Chief Engineer Skinner, started work June 7. Special officers detailed by the sanitary department assisted.

Prisons to Be Made Sanitary.—The joint committees from the Society of Medical Jurisprudence and the Civic Club met recently to perfect plans for conducting an extended investigation of the police stations, courts and court prisons of Manhattan and the Bronx. At the end of the summer after these have been investigated, all found insanitary will be reported to the Health Board and that body will be asked to direct that they be closed

Hospital Managers Named.—Gov. Higgins decided on the appointments of managers of the state hospitals for the insane which under the Allis law, takes the place of the board of visitation to these institutions. This restoration of the boards of managers marks the culmination of a fight of the charitable interests of the state against the legislation of 1902, which put them out of office and centralized all power over the insane hospitals in the State Lunacy Commission.

New York City.

To Endow a Free Bed.—The will of Mrs. Rebecca Ladew bequeaths $5,000 for the purpose of endowing a free bed in a hospital to be designated by her executors.

Yellow Fever Death.—Frank O'Leary, a passenger on the *Seguranca* from Colon, who has removed to Swinburne Island, on the arrival of the ship in New York, died from yellow fever, June 9.

Record Low Death Rate.—The death rate for the week ended June 2 was equivalent to annual mortality of 16.11 per thousand, which is a new death record for this season of the year. The record for a number of years has been 16.74.

St. Gregory's Free Hospital.—The first hospital in this city for purely the care of accident cases was opened last week. Two ambulances are attached to the hospital and it is intended to aid the Hudson Street Hospital in accident cases as much as possible.

A Medical Quack Heavily Fined.—Through the efforts of the County Medical Society Joseph Rohrer was sentenced to pay a fine of $500, the heaviest imposed for a misdemeanor in the Court of Special Sessions. He was convicted for practicing medicine without a license, and this was his third conviction.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended June 3, 727 cases of measles with 17 deaths; 393 cases of tuberculosis with 142 deaths; 320 cases of diphtheria with 27 deaths; 152 cases of scarlet fever with 14 deaths; 71 cases of cerebrospinal meningitis with 60 deaths; 38 cases of typhoid fever with 4 deaths; 113 cases of varicella and 1 case of smallpox. The epidemic of cerebrospinal meningitis seems to be decreasing.

A New Law Needed.—Health Commissioner Darlington was treated so insultingly when he appeared before the town of Bloomingburgh, Sullivan County, to ask for permission to establish a sanitarium for New York City's consumptives that he has determined not to appear before a town board but instead to prove unconstitutional the law which requires that New York City can not establish a sanitarium without obtaining the consent of the town board and the Board of County Supervisors.

Personal—Dr. Frederic Griffith has been appointed by the Pennsylvania State Society a member of the International Peace Congress to be held in Lucerne, Switzerland, during the coming summer.——E. J. Lederle, formerly Commissioner of Health, has been appointed a member of the State Water Commission.——Dr. Valentine Mott and wife sailed on the *Barbarossa* June 8.——Dr. Francis J. Quinlan has been elected President of the Catholic Club.——Dr. William S. Stone, who was operated on for appendicitis last week, is convalescing rapidly.

Lebanon Hospital.—The annual report of this institution shows that the work has grown to such an extent that a new site has been required for the erection of a training school for nurses so that the quarters at present occupied may be used as wards. The money for this purpose thus far donated amounts to $30,000. During the past year 2,721 patients were treated. The dispensary treated 19,009 cases, and the ambulance responded to 1,401 calls. The receipts during the year amounted to $97,521 and the disbursements to $96,219. The legacies received amounted to about $2,000.

Subway Air Again.—The few warm days that we have had this spring have led to renewed agitation in regard to the subway. In warm weather the surface air is warmer than the air underground and in consequence of the density due to lower temperature and the admixture of carbonic-acid gas the air is retained under ground and while passing cars may churn up the air there is not that exchange between the surface and subway air which is requisite for proper ventilation. It is probable that it will be necessary to introduce rotary fans. Health Commissioner Darlington has drawn up rules to be applied to the cleaning of the stations and wall of the subway, most of which has already been put into service.

The Milk Supply.—Judge Lacombe has signed an order suspending the operations of an injunction recently granted in the Federal courts in favor of the Ironclad Manufacturing Company. The order prevented the use of a patented milk can owned by the company and it was claimed that there were as many as 200,000 cans in use in this city which were infringements on the patent. Certain milk dealers said that the Ironclad Company threatened to seize their cans and empty the milk and retain possession of the cans.——The Association for the Improvement of the Milk Supply of New York held its first executive meeting June 8. This association will work with the Board of Health. The officers will have sanitary supervision over the men who deliver milk in the city and over all dairies, creameries and shipping stations. Firms interested in industries allied to the milk supply will be admitted to the association.

Tuberculosis Among Negroes.—A special class for the treatment of pulmonary tuberculosis among negroes has been started at the Department of Health's clinic for the treatment of communicable pulmonary diseases. This class will be held on the evenings of Tuesday, Thursday and Saturday of each week from 8 to 9 p. m., and only negroes will be seen on those days and hours. The establishment of such a class was due to a request made by the Afro-American physicians of the city, who believed that the colored people would attend such a special class more readily. The physicians in attendance are negroes, and arrangements have been made for the services of a colored nurse. The physicians on duty are: Dr. Peter A. Johnson, laryngologist; and Drs. William H. Johnson, Alexander A. Kellogg, Albert S. Reed, J. F. Thorpe, and E. P. Roberts, attending physicians. These physicians were recommended by the Medico Chirurgical Society, New York City, at a special meeting June 4. Treatment and medicines are, of course, free; and the patients will be visited at their homes by the tuberculosis nurses of the department. Negroes may attend any of the other classes of the clinic, which is open daily from 9 to 4, and on Monday, Wednesday and Friday evenings from 8 to 9 p. m.

Defective Pupils in Schools.—It has been announced by the Medical Inspector in the division of contagious diseases of the Health Department that of 7,166 boys whom he had examined, he had found 3,132 in need of medical attention. The following table shows the result of the work:

Total examination of boys	7,166
Cases of bad nutrition	632
Cases of enlarged anterior glands	1,221
Cases of enlarged posterior glands	417
Cases of chorea (St. Vitus's dance)	85
Cases of cardiac disease	133
Cases of pulmonary disease	127
Cases of skin disease	126
Cases of deformity of spine	68
Cases of deformity of chest	100
Cases of deformity of extremities	133
Cases of defective vision (objective)	1,273
Cases of defective vision (subjective)	517
Cases of defective hearing	265
Cases of defective nasal breathing	843
Cases of defective teeth	1,946
Cases of hypertrophied tonsils	602
Cases of posterior nasal growths	704
Cases of bad mentality	650
Requiring medical attention	3,132

The results of inquiry into the 650 cases of weak mentality gave the following results:

Total mental cases investigated	515
Cases of bad nutrition	113
Cases of anterior glands	132
Cases of posterior glands	23
Cases of chorea	13
Cases of cardiac disease	20
Cases of pulmonary disease	0
Cases of skin disease	11
Cases of deformity of chest, spine and extremities	28
Cases of defective vision	229

Cases of defective hearing	71
Cases of defective nasal breathing	163
Cases of defective teeth	249
Cases of defective palate	18
Cases of hypertrophied tonsils	99
Cases of posterior nasal growths	174

NORTH CAROLINA.

Personal.—Drs. William DeB. McNider, Raleigh and Martin L. Foroder, Rolesville, have been elected members of the Wake County Sanitary Board.——Dr. James W. McGee, Jr., Raleigh, has been elected superintendent of health of Wake County.——Dr. S. Fred Pfohl, Winston-Salem, has been elected health officer of Forsyth County.

Receive Diplomas.—The graduating exercises of North Carolina Medical College, Charlotte, were held May 14 and 15, the closing event taking place May 15. Dr. W. Gill Wylie, of New York, delivered the closing address and the president, Dr. J. P. Monroe, presented diplomas to a class of 25. After the exercises a banquet was tendered the graduating class by the faculty.

Communicable Diseases.—During April there were reported to the State Board of Health, measles from 42 counties; pertussis from 19 counties; scarlet fever from 5 counties; diphtheria from 10 counties; typhoid fever from 14 counties; malarial fever from 4 counties; influenza from 17 counties; pneumonia from 23 counties; parotitis from 3 counties, and smallpox from 45 counties.

State Board of Health.—The annual meeting of the State Board of Health was held recently in Greensboro. Four of the nine members retired this year. The State Medical Society filled two of the vacancies by the re-election of Drs. George G. Thomas, Wilmington, and Thomas E. Anderson, Statesville. The governor appointed two members, Drs. J. Howell Way, Waynesville, and William O. Spencer, Winston-Salem.

Faculty Changes.—The faculty of the North Carolina Medical College held a meeting in the office of Dr. A. J. Crowell April 20 and elected the following members: Dr. Frank M. Winchester, Charlotte, professor of obstetrics; Dr. Robert E. Mason, Charlotte, professor of therapeutics, and Dr. B. S. Moore, lecturer on surgery. The North Carolina Medical College now has a faculty composed of twenty professors and five lecturers, and gives four courses of nine months each.

OHIO.

Honor Nestor of Dayton Profession.—The Montgomery County Medical Society gave a reception and banquet June 5 in honor of Dr. John C. Reeve, on the occasion of the seventy-ninth anniversary of his birth and the fifty-first anniversary of his entry into active practice. Dr. John S. Beck acted as toastmaster.

Voyagers by Sea.—Dr. and Mrs. Edward Edwards, Delphos, started for Europe May 18.——Dr. Albert E. Warren, Youngstown, and Henry D. Warren, Warren, have arrived at Honolulu, and will return on the same sailing vessel to San Francisco.——Dr. and Mrs. Frank L. Stillman, Columbus, sailed for Europe June 3.——Dr. and Mrs. A. Per Lee Pease, Massillon, have returned from a trip around the world.

Personal.—Dr. Milo Wilson has been appointed superintendent of the Athens State Hospital.——Dr. Alfred A. Jenkins has been appointed surgeon in the engineers, vice Dr. William Hendry, deceased.——Dr. Harry A. March, Canton, has been appointed coroner of Stark County, vice Dr. Clarence F. Schlitz, resigned.——Dr. Benjamin F. Clark, local surgeon for the B. & O. S. W. Railroad at Cincinnati, has resigned. Dr. Charles F. Winton succeeds him.

New-Made Physicians.—At the eighty-sixth annual commencement exercises of the Medical College of Ohio, the Medical Department of the University of Cincinnati, May 30, a class of 33 was graduated. President Charles W. Dabney of the university conferred the degrees.——Miami Medical College, Cincinnati, graduated a class of 22 June 2. Dr John C. Oliver delivered the doctorate address, and Hon. Jacob Schroeder conferred the degrees.

Hospital Staff Appointments.—Dr. Frank A. Stovering has been re-elected president of the staff; Dr. Milton J. Parke, secretary; Dr. Charles B. Parker, visiting surgeon; Drs. Joseph H. Hobson and Thomas J. Mizer, alternate surgeons; Drs. John H. Lowman and Henry W. Rogers, consulting physicians; Dr. Samuel W. Kelley, pediatrist; Dr. Joseph C. Fritch, visiting ophthalmologist and otologist, and Dr. Alvin S. Storey, skiagrapher at St. John's Hospital, Columbus.——Dr. George A. Fackler has been elected president; Dr. B. K. Rackford, vice-president; Dr. Arch I. Carson, secretary, and Dr. Phineas S. Conner, treasurer, of the medical staff of the City Hospital, Cincinnati.

The Afflicted.—Dr. William H. Knauss, Newark, on May 23, while examining a pistol in the armory of the Fourth Regiment, O. N. G., of which he is assistant surgeon, was accidentally shot and seriously wounded.——Dr. Arthur H. McCrory, Bucyrus, was run down by his automobile while he was endeavoring to escape a collision with a passenger train May 28. He sustained severe bruises and a fracture of one rib.——Dr. Salathiel A. Hitchcock, Elida, was stricken with paralysis May 26.——Dr. Martin Friedrich, health officer of Cleveland, is seriously ill with typhoid fever.——Dr. Charles C. Mandeville, Galion, made a misstep while going up to his office May 27 and fell, injuring himself seriously about the head.——Dr. Philander Jacobs, Jackson, is in critical condition from a cerebral hemorrhage May 8.——Dr. William A. Pitzele, Lorain, injured his arm in saving a boy from being run over May 31.

PENNSYLVANIA.

A Narrow Escape.—Dr. J. Charles Hamnett, an aged physician of Homestead, took poison by mistake May 31, but, thanks to prompt aid, his life was saved.

Personal.—Dr. Raymond Barber, Doylestown, has been put in charge of a mining hospital in Rock Springs, Wyo.——Dr. R. Bruce Gamble has been appointed local surgeon of the Bessemer & Lake Erie Railroad at Meadville, vice Dr. Edward T. Lashells, who resigned on account of ill health——Dr. Edward W. Meisenhelder, Jr., has been added to the gynecologic staff of the York Hospital.

Show Appreciation of Services Rendered.—For the meritorious work done by the Harrisburg Hospital, in the care of the dead and the aid to those injured in the recent wreck on the Pennsylvania Railroad near Harrisburg, the officials of the company have donated $10,000 to the hospital without restrictions as to its use, and accompanied the donation by a letter expressive of the deep gratitude of the company.

Banquet to Veteran Physicians.—Dr. John B. Carrell, Hatboro, gave a dinner to about 80 physicians of Bucks and Montgomery counties June 8, in honor of six of the oldest practitioners in the two counties: Drs. Joseph Foulke, Evan J. Groom, Joseph Thomas, Joseph B. Walter, James N. Richards and Horace M. Bellows.——The Medical Society of Susquehanna County on June 7 celebrated the ninetieth birthday anniversary of Dr. William Lee Richardson, Montrose, by holding a banquet at which he was the guest of honor and was presented with a loving cup.

Philadelphia.

Dr. Martin Injured.—Dr. Edward Martin, director of the Department of Health and Charities was painfully injured in a trolley car collision June 7. He is progressing toward favorable recovery.

Personal.—Dr. Charles H. Weber sailed for Europe June 6.——Dr. and Mrs. Augustus Kempton will return home from Europe this month.——Dr. David Riesman sailed for Europe June 15.——Dr. John H. Musser has been chosen a member of the mayor's advisory board.

Residents Appointed.—Dr. T. William Schleindwine, of the resident staff of St. Joseph's Hospital, has been appointed resident physician in the Wills Eye Hospital.——Dr. J. J. Lynch has been appointed resident physician of Frankford Hospital, succeeding Dr. J. H. Hoffa, who resigned on account of ill health and will go to Europe.

The Osler Portrait.—The graduates of the medical department of the University of Pennsylvania who studied in the university under Dr. Osler presented the board of trustees with a life-size oil portrait of their distinguished teacher at the one hundred and forty-ninth annual commencement exercises, June 14. The portrait was presented by Dr. M. Howard Fussell, a member of the medical faculty and chairman of the picture committee The portrait was received on behalf of the university by the provost, Charles C. Harrison.

Health Report.—The total number of deaths for the week aggregated 420, a decrease of 30 over those reported last week, and a decrease of 6 from the corresponding period of last year. The principal causes of death were: Typhoid fever, 11; diphtheria, 8; tuberculosis, 53; cancer, 18; apoplexy, 24; heart disease, 55; acute respiratory disease, 37; enteritis, 28, and Bright's disease, 24. There were 229 cases of contagious disease reported, with 20 deaths, as compared with 275 cases and 23 deaths the previous week. Typhoid fever is still prevalent, though all contagious diseases, with the exception of typhoid, show a marked decrease.

Dr. Dixon Honored.—Dr. Samuel G. Dixon, president of the Academy of Natural Sciences, was appointed state commissioner of health June 6. Dr. Dixon graduated from the University of Pennsylvania in the class of 1886. He has made valuable discoveries both in bacteriology and biology. In 1891 he became curator of the Academy of Natural Sciences and in 1896 was elected president, which position he has held since. He is a trustee of the Wistar Institute of Anatomy, vice-president of the Zoological Society of Philadelphia, and a member of the council of the American Philosophical Society. He was born in this city in 1851. He served for one year as professor of hygiene in the medical and scientific departments of the university.

Hospital Reports for May.—There were 115 patients admitted to the wards of the Polyclinic Hospital; 1,981 new patients were treated in the dispensary, and 9,200 visits were made to the different dispensaries. The accident ward received 754 patients.——The Kensington Hospital for Women admitted 77 patients and 67 operations were performed.——The Pennsylvania Hospital admitted 415 patients to the wards, treated 2,136 new patients in the dispensaries, and 5,449 revisits were made; 2,842 patients were treated in the receiving ward.——The Episcopal Hospital admitted 254 patients and treated 7,717 in the different dispensaries.——Two hundred and thirteen patients were admitted to the wards of St. Agnes' Hospital; 613 new patients were treated in the dispensaries, and 2,225 old patients.——St. Mary's Hospital admitted 166 new patients and treated 5,179 patients in the different dispensaries.

GENERAL.

American Pediatric Society.—This society will hold its seventeenth annual meeting at Lake George, N. Y., June 19-21, 1905.

Smallpox on the Transport Sherman.—An outbreak of smallpox was reported on the army transport *Sherman* on its arrival at Manila. The Ninth Infantry and the second squadron of the Seventh Cavalry were on board. The outbreak is not considered serious.

Ohio Valley Medical Association.—The seventh annual meeting will be held at Henderson, Ky., Nov. 8-9, 1905. The secretary is Dr. B. L. W. Floyd, Evansville, Ind., and Dr. Arch Dixon, Henderson, Ky., is chairman of the committee of arrangements. Those wishing to contribute papers can address the latter.

Meeting of the American Neurological Society.—At the thirty-first annual meeting of this society, held in the College of Physicians, Philadelphia, June 1-3, the following officers were elected for the coming year: President, Dr. Henry L. Stedman, Boston; vice-presidents, Drs. Henry M. Thomas, Baltimore, and George W. Jacoby, New York; secretary and treasurer, Dr. Graeme M. Hammond, New York; councilors, Drs. W. G. Spiller, Philadelphia, and Walter Channing, Boston. It was decided to hold the next annual meeting in June, 1906, in Boston.

Annual Meeting of the American Laryngological, Rhinological and Otological Society.—At the eleventh annual meeting of this society, held in Boston, June 5-7, 1905, the following officers were elected for the ensuing year: President, Dr. James E. Logan, Kansas City, Mo.; vice-presidents, Drs. Thomas H. Halsted, Syracuse, N. Y.; William L. Ballenger, Chicago; H. Bert Ellis, Los Angeles, and Henry L. Myers, Norfolk, Va.; secretary, Dr. Wendell C. Phillips, New York; treasurer, Dr. Ewing W. Day, Pittsburg, Pa.; council, Drs. Frederic C. Cobb, Boston; James F. McKernon, New York, and H. W. Loeb, St. Louis.

American Microscopical Society.—The twenty-seventh annual meeting will be held at Cedar Point (Sandusky) Ohio, on July 5-8, 1905. The society will be the guests of the Ohio Lake Laboratory under the direction of Prof. Herbert Osborn of Ohio State University, who has placed at the disposal of the meeting all the facilities of the laboratory and who is planning excursions and collecting trips to demonstrate the rich fauna and flora of this region. The meetings will be held in the laboratory, but the president's address will be given in Sandusky. Thursday's program is especially devoted to medical zoology, the afternoon being given to a symposium led by the president, Dr. Henry B. Ward, Lincoln, Neb., on animal parasites, their effects on the hosts, with demonstrations of specimens, microphotographs and discussion. Further information may be received by addressing the secretary, Dr. Robert H. Wolcott, Lincoln, Neb.

French and Americans in the Canal Zone.—The chief sanitary officer of the Canal Zone, in his report dated April 21, 1905, according to *Public Health Reports*, makes the following comparison of the health conditions of the French and American laborers in the first year of their work, with the prevailing conditions in that region: There were 9,000 employes on the rolls on March 31, 1905, with 301 admissions to hospital during the month, 11 deaths, and 153 remaining sick at the conclusion of the month, giving yearly an admission rate of 401.28, a constant sick rate of 17, and a death rate of 14.66 per mille. Under the French the admission rate to the hospital for the first year was 630.38, and the death rate 66.80 per mille. An extension throughout the year of the American rates for March would give 3,612 cases of sickness and 132 deaths, whereas, for the same number of men and the same length of time, the French had 5,850 men taken sick, with 620 deaths.

Fifteenth International Medical Congress.—It is anticipated that there will be a much larger attendance at the next congress (Lisbon, Portugal, April 19-26, 1906) than at the last, as a great many objectionable features that interfered before have been eliminated. The date of the congress of 1903 interfered with that of the American Medical Association, and this prevented a large number from taking advantage of it. The qualifications for membership have also been placed on a higher plane, which will add much to the ethical tone of the congress. Dr. Charles Wood Fassett, St. Joseph, Mo., has arranged with Thomas Cook & Son (who had full charge of the details of a similar trip in 1903) to take a party of physicians together, relieving them of all troublesome details of arrangements, and securing companionship, saving of expense, etc. A number of returning routes have been selected, and those who desire may include a Mediterranean trip, excursions to Madrid, etc., as well as an opportunity to return leisurely through Italy, France and Great Britain. Dr. John H. Musser, Philadelphia, is chairman of the National American Committee, and Dr. Ramon Guiteras, 75 West 55th Street, New York City, is the secretary, to whom all applications for membership and communications in regard to the presentation of papers should be addressed. Further information about transportation may be obtained from Dr. Fassett. (See further notice on next page.)

FOREIGN.

The Next Roentgen Congress.—Another international congress devoted to the Roentgen rays is already planned for 1908, to be held at Amsterdam.

Official Insect Extermination.—The Cuban Medical Congress adopted a resolution asking that a special branch of the Public Health Department should be devoted exclusively to extinction of infection-carrying insects.

Dried Fruits from the Orient.—The Russian governor of Turkestan has written the home government, urging the prohibition of importation of dried fruits from Persia into Russia. The reports of the Russian physicians stationed throughout the country indicate that these dried fruits are liable to be a source of infection. They are handled without care and cases of cholera were observed in the vicinity of some of the places where the fruits are spread to dry.

Combes in Private Life.—Dr. Combes, who until recently was prime minister of France, with his every move chronicled in the political press, has returned to his home in a retired province and resumed the practice of his profession. It is said that he is a man of no luxuries, a non-smoker, a non-theatergoer and a teetotaler. He has voluntarily returned to his native village and provincial obscurity now that he has been released from the cares of political leadership.

Campaign Against Tuberculosis in Spain.—A national association has been organized in Spain to aid in the struggle against tuberculosis. A general meeting was held in a Madrid theater, Sunday, May 19, and a dozen addresses were made by prominent men. Ramon y Cajal spoke on the importance of laboratory studies for the campaign against tuberculosis, and F. Rodriguez spoke on the rôle of the daily press in this line. The *Siglo Medico* comments sarcastically on the number and length of the addresses, each one proclaiming that deeds, not words, are what is needed, and each more prolix than its predecessor.

Celebration in Honor of the Inventor of Clinical Laryngoscopy.—A communication has been received from Prof. O. Chiari, president of the Vienna Laryngological Society, to the effect that in 1908 fifty years will have elapsed since Türck founded clinical laryngoscopy and rendered it the common property of physicians in general. The Vienna Laryngological Society decided, at a recent meeting, to celebrate the anniversary with due ceremony and invites all specialists at home and abroad to participate. Türck's work in perfecting and applying

in the clinic Garcia's laryngoscope was mentioned, in connection with the Garcia semicentennial, on page 970.

High Infant Mortality in Germany.—Notwithstanding the progress of hygiene and insurance against sickness in Germany, the mortality among infants less than a year old is said to be more than twice that of France and nearly twice that of the United States. The percentage of deaths among infants in comparison with the deaths at all ages is, for Germany, 35.8; for France, 15.5; for Great Britain, 26.6; and for the United States, 19.2. The Berlin authorities have recently taken steps to introduce the "nursling consultations" which are proving so successful in France, and bequests have been received to apply toward reducing the infant mortality in that great industrial center.

The French Yellow Fever Commission in Brazil.—Marchoux and Simond were delegated by the Paris Pasteur Institute to study tropical diseases in Brazil, and first arrived there in 1901. They returned to France for a time in 1903, but with that exception have been almost steadily at work until their final departure last month. A convenient two-story building was erected for their research in the grounds of the S. Sebastiao Hospital. The expenses were paid by the French government and the government presented the building and its equipment to the Brazilian authorities when the commission left for home. Their research fully confirmed the mosquito theory in regard to yellow fever.

Pilocarpin in Cerebrospinal Meningitis.—A physician in eastern Austria writes to the *Wiener klin-therap. Wochft.* to urge the more general use of pilocarpin in treatment of cerebrospinal meningitis. He relates his extremely favorable experiences with it in pneumonia and meningitis, insisting that the leucocytosis which it induces, with the consequent phagocytosis, accomplishes all and more than can be realized from lumbar puncture, hot baths and salicylic acid in meningitis. His experience has been only with the sporadic form of cerebrospinal meningitis. He insists that .05 to 0.7 cg. a day is none too much for an adult and .02 to .05 for a child, administered by the mouth, and remarks that this dosage is free from danger, which he thinks can not be said of its subcutaneous administration.

Parsee Maternity Hospital, Bombay.—The annual report of the Parsee Maternity Hospital in Bombay shows a continued record of really good work. The *British Medical Journal* states that its popularity among this community is remarkable; out of a total of 1,304 births among the Parsees no less than 535 occurred in this hospital. The hospital is always full and many have to be refused admission. The example set by this hospital has been followed by other sects which have now established separate hospitals for their respective communities. In the Parsee institution a certain proportion of the poor are admitted but the majority pay. Infant mortality in the hospital seems to be much lower than in the homes of the people, as only 10 deaths occurred among the children born in the hospital while 59 occurred among those outside.

Suspension of the Moscow Psychologic Society.—The Moscow Psychologic Society is a very prominent organization, with members of world-wide fame and honorary members in many countries. At a recent meeting Nikitin spoke in favor of suspending the society, exclaiming: "How can we devote ourselves to the study of psychologic matters at a time when the whole land is seething with excitement? People and institutions which have always quietly hitherto fulfilled their duties are now all clamoring, 'We can't live this way any more.'" Bechterew presided over the meeting and opposed the disbanding of the society, but he was voted down and the society was declared closed by 12 yeas to 8 nays. He asserted that the closing could apply only to the present meeting. Before the society could be definitely suspended a vote of all the members would have to be taken.

Pecuniary Responsibility for Transmission of Syphilis.—THE JOURNAL chronicled about two years ago the decision of a French court, which condemned a young man to pay damages to a girl of 16 whom he had infected with venereal syphilis, knowing his infectious condition at the time. The courts of Havre are now engaged on a similar case. The woman plaintiff suing for damages has established her case in every point except whether the defendant was aware that he had syphilis at the time of its transmission. The court is awaiting testimony on this point, having conceded that the defendant must pay the damages if it can be proved that he was aware of his infectious condition. The *Semaine Médicale* comments on the case that if this jurisprudence should become generally accepted, namely, that the contaminator is responsible for pecuniary damages if he knows or has reason to believe that he is liable to communicate the disease with which he is affected, it would be more effectual for the prophylaxis of venereal diseases than any of the repressive measures.

Approaching International Medical Congress, Lisbon, April, 1906.—The sixth official bulletin sent out by the committee of administration brings word that the total of communications presented to the congress now reaches 233, and that the membership list is growing apace. The names are published as the members inscribe. Chicago and New York have a number of representatives in the last series. Several scientific societies pay each a single subscription and are to be represented by a present or former president or other delegate. The subscription fee should be sent direct to the treasurer, Dr. Alfredo Luiz Lopes, Hopital de Rilhafolles, Lisbon, Portugal. The committee comments on Sir Felix Semon's words in regard to the necessity for a separate section for laryngology, instead of yoking it with rhinology, otology and stomatology in a single section. His statements were cited in THE JOURNAL recently on page 1129. The committee replies that the members of the section may form subsections as desired, but by thus grouping specialties the arrangement of the congress becomes much less unwieldy. It adds that Sir Felix Semon's own specialist journal is addressed to "laryngology, rhinology and allied sciences," and that the annual meeting of the British Medical Association always groups these specialties in a single section. At the Moscow congress there were only 12 sections in all. The official bulletins of the congress are written in French, and will be sent to physicians on request. Address Prof. Miguel Bombarda, Hopital de Rilhafolles, Lisbon, secretary general. The titles of communications are published as received. (See page 1941.)

LONDON LETTER.

The British Dental Association.

The twenty-fifth annual meeting of the British Dental Association has been held. The report showed that the membership continues to increase and now is about 1,400. Reference was made to the fact that the admiralty has appointed three dentists to the navy and regret was expressed that the army authorities had not been allowed to increase their staff, the blame apparently resting with the treasury. The president, Mr. T .Gaddes, delivered an interesting address. He referred to the great increase in the number of individuals practicing dentistry unregistered. This condition he attributed to the most regrettable state of the law as to practice. He expressed a hope that no impediment would be placed in the way of students for dental qualifications and thought that the present curriculum should not be extended or made more severe. The need for efficient dental service for the poor, he considered, would be best met by the establishment throughout the country of provident dental aid associations, guilds or dispensaries. He advocated also the teaching of oral hygiene in elementary schools in order to prevent caries.

The Centenary of the Royal Medical and Chirurgical Society.

One of the most interesting features of the celebration of the centenary of the Royal Medical and Chirurgical Society (previously described in THE JOURNAL) was an exhibition of books, instruments and other objects brought together to illustrate the condition of medicine when the society was established. The exhibits were arranged in six sections. The first section consisted of books and was subdivided into three parts. The first part comprised books in use by the society in the year of its foundation, 1805. The second part comprised books and pamphlets on vaccination, including a Chinese work with an English translation by Sir George Macartney, sent as a present to Dr. Jenner. The third part contained miscellaneous books, among which were: "Outlines of a Course of Lectures on the Practice of Medicine, as Delivered in the Medical School of Guy's Hospital," 1802-6, by William Babington and James Curry; "Essays on Quackery and the Dreadful Consequences Arising from Taking Advertised Medicines," and journals and textbooks of the period. The second section contained manuscripts. Among these were "Lectures on Anatomy," by Henry Cline, and a list of the so-called African surgeons—persons who passed an examination at the Liverpool Royal Infirmary and were considered competent to act as surgeons on ships engaged in the slave trade. The third section comprised instruments, among which were the forceps which belonged to Dr. John Burton, the prototype of Dr. Slop in "Tristam Shandy," who is described in Chapter XIX as: "Of all the men in the world the fittest for my father's purpose; for his newly invented forceps was the armour he had proved to be the safest instrument in deliverance." The fourth section comprised portraits and the fifth medals. In the former were portraits of the first twenty-five presidents of the society. The sixth section was miscellaneous

Pharmacology

FURTHER COMMENTS QUOTED.

We submit below some expressions of opinion from various publications which discuss the general subject of secret nostrums and the plan of the Council on Pharmacy and Chemistry:

NORTHWEST MEDICINE (April): "These uncertainties are now to be dissolved by action of the Council on Pharmacy and Chemistry of the American Medical Association, whose personnel includes chemists and pharmacists of national note. . . . The profession will await the appearance of this publication with much interest. The mooted question of ethical and unethical preparations should then be relegated to the past. For whatever passes muster at the hands of the men composing this council should be worthy of unquestioned acceptance."

THE COLUMBUS MEDICAL JOURNAL (April, 1905): "We note with pleasure that the Board of Trustees of the American Medical Association has created an advisory board to be known as the Council on Pharmacy and Chemistry of the American Medical Association. . . . The work of this council will be of great advantage to physicians and to editors of other journals, for, as stated by the council, the physician not only has the right to know, but it is his duty to know, the composition of medicines he prescribes for his patients."

THE MEDICAL RECORDER, April, after calling attention to an abuse which it declares "is constantly on the increase, namely, the prescribing of secret or semi-secret proprietary medicines by reputable physicians," remarks: "If this abuse continues the art of prescription writing and also the art of prescription compounding will soon be lost arts. This is not, however, a local condition; it exists all over the country. The Council on Pharmacy and Chemistry will pass on the value of proprietary medicine from a pharmaceutical and ethical point of view. After that, if the evil continues, the profession will have themselves alone to blame."

"The Best Artificial Food."

We have recently had occasion to open a package of a well-known "Tasteless Cod Liver Oil" preparation. The circular which was wrapped about the bottle was replete with interesting information, especially for the patient who obtains the remedy in the original package, as prescribed by his physician. He finds in it a list of the diseases in which the preparation does wonders—they range from the dread consumption to cystitis and hemorrhage of the kidney. Most interesting to us, however, is the statement that this compound "contains all the necessary elements of nutrition." It is too bad to disturb this beautiful vision by the report of the chemist. This shows that the product is quite free from oil or proteids; the only nutrient ingredients are alcohol, sugar and, perhaps, glycerin! But the claims of the manufacturer are probably quite correct, for it contains carbon, hydrogen, oxygen, and probably a trace of nitrogen—so does gunpowder! Perhaps it will now be the turn of strychnin to be advertised as the ideal food! It seems superfluous to point out the moral of this tale.

Correspondence

Pennsylvania and North Carolina State Board Examinations in 1904.

WAYNESVILLE, N. C., June 2, 1905.

To the Editor:—In THE JOURNAL, May 6, is published a very elaborate series of tables exhibiting in detail the results of the examinations held in the year 1904 in the various states for state license to practice medicine. These tables are very instructive, comprehensive and complete, and replete with much valuable information relative to the standards of medical education in the 63 medical colleges of the country whose graduates appeared before the various examining boards of the states.

In 1904 there were examined for license in the separate states of the Union 8,034 graduated physicians, of which vast number 5,672 were granted license and 1,365 rejected—the gross percentage of failures being 19.3.

Some of these were duplicates, of which the carefully prepared tables make no mention. I know that of recent years it has become more or less a custom for young physicians just graduated to "swing around the circle," as it were, of a number of state medical boards and to secure license from a few or several pending the important question of location. This injects a possible source of error into the valuable data which future tabulators for THE JOURNAL will likely find some way to avoid. Suffice it to say here that in the main the work has been splendidly performed and has brought together a mass of information relative to the various medical teaching institutions of our country which is nowhere else to be found, and which in its conception reflects credit on the editor of THE JOURNAL.

But, to consider more critically the results manifest in the tables, we find a not inconsiderable portion of these graduates were from the schools prior to 1904, the 1904 graduates making a decidedly better showing before the boards. Of the 8,034 graduated applicants in 1904, 4,542 of the number were graduates of the colleges in 1904, and from this number 3,533 were granted license and 449 rejected, the percentage of rejections being for the graduates of 1904 only 11.3.

THE JOURNAL presents a smaller table, showing in detail the rejection of graduates by all state boards from the graduates of the separate states of the Union, and in this interesting tabulation it falls to the unenviable portion of North Carolina medical colleges to present the greatest percentage of failures, to-wit, in the "graduates of all years" North Carolina leads in percentage of failures with a record of 39.6 per cent., and in "graduates of 1904" it is somewhat lower, being 34.1 per cent., though still at the top of the list for failures.

But a little investigation shows that the high percentage of the failures of North Carolina graduates in medicine is due to the record of the graduates of the negro medical college at Raleigh, the Medical Department of Shaw University or Leonard Medical College, as it is usually called.

A glance at the figures below is interesting:

	Passed.	Failed.	Rejected, Reg. on per cent.	Dipl.	Totals.
Physicians examined by all state medical licensing boards in 1904.....	5,672	1,363	19.3	999	8,034
N. C. MEDICAL COLLEGES:					
University of N. C.....	4	0	.0	0	4
N. C. Med. College.....	19	1	.5	0	20
Leonard Medical College....	12	22	64.7	0	34
Physicians examined by all state examining boards in 1904, graduates of the year 1904—graduates of 163 schools	3,643	449	11.3	560	4,542
N. C. MEDICAL COLLEGES:					
University of N. C.....	4	0	.0	0	4
N. C. Medical College.....	17	0	.0	0	17
Leonard Medical College....	8	15	65.2	0	23

While an occasional negro is found in the medical classes at Harvard and other of the eastern schools of medicine, it is a fact that the great majority of negroes who study medicine do so at the schools in Raleigh, N. C., Nashville, Tenn., and Washington, D. C., and it would only have been eminently fair and proper if THE JOURNAL had taken cognizance of the presence of a considerable percentage of negro graduates in the colleges of certain states before it published gross results which, on the surface, appear to the discredit of the medical colleges therein located.

A cursory survey of the figures in the above table reveals the fact that the correct percentage of failures of graduates from North Carolina schools of medicine graduating in the various years prior to 1904, as evidenced in the examinations by the various state boards of the country for the examinations held in 1904, was for white men only 5 per cent. Of white graduates of the classes of 1904 the percentage of failures was 0. A very striking contrast to the figures which THE JOURNAL publishes as evidencing the standard of medical education in North Carolina and which figures place her at the bottom of the list of all the states of the Union, when the facts are that, when the records of her white graduates are studied, she should come at the top, being better than that

of any southern state and equaled by few in any section. Taken—13 states—at random over the country, we note for comparison the percentage of failures of all graduates without regard to year of graduation before the boards in 1904 was as follows:

Alabama, 11.1; Georgia, 8.8; South Carolina, 7.7; Texas, 14.3; Virginia, 8.5; Massachusetts, 7.5; Wisconsin, 33.3; Michigan, 12.5; Louisiana, 15.9; Illinois, 8.2; New York, 5.3; Maryland, 28.7; Ohio, 19.3; North Carolina (white physicians), 5.

Again, take the record of the examination of graduates of all colleges in 1904 before all state boards in 1904 and examine the individual states:

Alabama, 3.1; Georgia, 1.4; South Carolina, 4.8; Texas, 16; Virginia, 6.2; Massachusetts, 6.7; Wisconsin, 37.5; Michigan, 3.0; Louisiana, 6.7; Illinois, 4.9; New York, 2.5; Maryland, 27.8; Ohio, 9.0; North Carolina (white physicians), 0.

Certainly in a matter which so concerns the reputation of the North Carolina colleges of medicine, it is only just that a loyal citizen of the state should direct attention to the incorrect rendering of the data relative to the standard of the schools. While I have never been connected in any capacity with the teaching of medicine in any of the North Carolina colleges of medicine, for several years I was a member of the North Carolina State Board of Medical Examiners, and an experience with some hundreds of medical graduates fully satisfied me that the work done in the schools of medicine of North Carolina for white men would compare very favorably with that done by white men anywhere.

In this connection it may be well to note also that in the negro medical college of this state, for about twenty years, a corps of able, earnest, faithful white men, the elite of the profession, socially, intellectually and otherwise, have labored zealously for the uplifting of the negro race by endeavoring to teach them medicine, but up to the present time (as, for instance, the examining board records above noted) with only indifferent success. God in his infinite wisdom evidently knew what he was about when he prepared and fitted certain races and types of beings for "hewers of wood" and "drawers of water," and even though we may with valiant effort attempt to change the inevitable bent of a race, the result is very apt to be only what a student of the negro from a scientific standpoint would expect. He is not possessed of those mental faculties which enable him to grapple with the abstrusities of medical science. By rote he may learn certain things (though his capacity even for doing this will be in direct proportion to the amount of white blood in his veins—how very, very rarely do we in the South who know the race as it is ever see much real intellectual development save where there is much mingling of Caucasian blood in the stream), but he can never be a man of science. In North Carolina, in addition to the earnest effort of white physicians, who have for two-score years labored without money compensation for the betterment of the race, there is everywhere a distinct recognition of the demand of the white physicians for negro physicians, and the white physicians are throughout the state encouraging negro physicians in every possible way. We consult with them freely, we aid them in every possible way, we look on them as the flower of their race—and they certainly are the decidedly superior men of their race in the South—they have absolutely the same examinations before our state examining board as the white physicians; there is no possible opportunity nor desire for discrimination, but all the same the results do not place the negro in a favorable light as a student of medicine.

In conclusion, if it is not asking too much, I respectfully suggest that in future compilations of this sort THE JOURNAL will please do just as the Federal Government does in compilations of such character—place the races in separate lists and not belittle the record of a proud and worthy people by comparisons which include the mingling of inferior creations.

J. HOWELL WAY, M.D.,

Secretary Medical Society of the State of North Carolina, member North Carolina State Board of Health, ex-member and Secretary North Carolina State Board of Medical Examiners.

[EDITOR'S NOTE.—The *total* percentage of failures in the State of North Carolina would be the same, even though it were shown *what portion* were of the white and what portion of the colored race. THE JOURNAL has certainly laid the blame at the right door when it needs but a glance at the tables to show what college or colleges are to blame for the high percentage of failures.]

PHILADELPHIA, June 6, 1905.

To the Editor:—The results of the examinations for medical licenses for 1904, as published in THE JOURNAL, May 6, have been very interesting to me, and I feel that I must commend you, both for their completeness and for the energy and labor expended in their preparation.

There is, however, one point for criticism concerning them, inasmuch as it introduces an element of unfairness in the published reports and records of certain schools. I refer to the fact that in the report for Pennsylvania schools, and perhaps for those of some other states, certain individuals were counted twice in the summations, this being contrary, I believe, to established principles of statistical determination. Thus, for the Medico-Chirurgical College of Philadelphia, 78 members of the class of 1904 are reported as being examined, with 13 failures, the latter giving a percentage of 16.7. The fact is, no one knows just how many individuals of this class were examined last year, as some were possibly examined in more than one state; but certainly not more than 56 were examined in Pennsylvania, and these, added to the 15 that you report as examined in other states, make a total of only 71, of whom none in the other states and only 6 in Pennsylvania had failed to pass at the end of the year. Thus the actual percentage of failures for this school for the class of 1904 is 8.45, or just about half of that reported. Likewise, of the graduates from 1900 to 1904, inclusive, there were but 88 examined instead of 98, and of these only 11 instead of 21 failed to pass by the end of the year, this justifying a reduction of almost one-half in the published percentage of failures. And so, for the total for all years the percentage is reduced from 20.8 to 11.95.

I have no doubt that the error is to be attributed to the source of your information concerning the Pennsylvania applicants rather than to your office, but I trust that you will appreciate the element of unfairness involved, and that in your future reports you will enumerate—as I believe you did in those for 1903—the actual number of *individuals* that have succeeded or failed at the *ends* of the respective years.

I would also ask you to note that, unless the emendation indicated be made for some of the other schools in this state, as well as for this college, Pennsylvania is a marked exception to what you state to be the apparent rule, namely, "that the graduates of a certain school should have a much better chance of passing the examination in the state in which the school is located than they have elsewhere." Thus, according to Table G, there were for the Pennsylvania schools collectively 29 reported failures to 299 successes outside the state. Does not this clearly indicate either that the reports for Pennsylvania need the correction that I have asked for, or that the examinations in this state are far more drastic to the graduates of its schools than are those of other states?

SENECA EGBERT.

Dean of the Department of Medicine, Medico-Chirurgical College.

[EDITOR'S NOTE.—There are two possible ways wherein duplication may have occurred. 1. An applicant who failed at one examination may have come up for re-examination later in the year and may have been reported as another individual. 2. A graduate may have taken examinations in more than one state. In neither of these instances, however, would this reflect unfavorably against the college concerned unless the applicant failed in more than one attempt, as otherwise his success at a second examination would tend rather to cancel his failure at the first trial. An individual succeeding before several state boards would reflect with sufficient favor on the college giving him his training to warrant its being counted as separate individuals. The same argument would fit repeated failure with, of course, the opposite interpretation. It should certainly stand to the credit of the Pennsylvania State Examining Board if it requires the same high standard for the colleges of its own as for colleges of other states.]

Was the Schoolmaster Abroad?

———— ——, June 9, 1905.

To the Editor:—I submit for the information of your readers the questions in a state board examination and the answers submitted by a recent graduate of a well-known medical college in the West. The college is a member of the Association of American Medical Colleges and, in common with all other medical institutions recognized by the board giving the examination, is supposed to require evidence of high school education as a condition of admission. I wonder, and your readers will doubtless wonder, how any college could have graduated a student who would be responsible for such answers as these:

Question.—Give physical signs and symptoms of cerebrospinal meningitis.

Answer.—Cerebro spinal meningitis is is Inflammation of the spinal column or spinal cord and of the Cerebelliam of the brain it is also Pain in the back and back of the head there is heat and inflammation.

Question.—Give physical signs and symptoms of tuberculosis of the lungs.

Answer.—Tuberculosis of lungs is pain in the brest a dry and Hacking caugh and may spit up some and they may no.

Question.—Give physical signs and symptoms of lobar pneumonia.

Answer.—In Lobar Pneumonia we have a pain in the side bad breath rattling of the lungs coated Tongue and some fever colared stools red splotches on back.

Question.—Give physical signs and symptoms of chronic Bright's disease.

Answer.—Chronic Bright's disease is Inflammation of the kidney's scanty High Colored urine Pain in the back and scarcely fells like mooving has Pain in back and lions specific Gravity 1018 to 1030.

Question.—Give differential diagnosis between malaria and pyemia or concealed suppurations.

Answer.—Malaria the patient is full of bile has a chill ever few days. has a yellow color and jest drags around all the time and so weak that he cant do nothing. Pyemia is also torn down tissues but does not have the chills like they do in Malaria.

Question.—What are the symptoms of acute catarrh of the middle ear and what is the treatment?

Answer.—The symptoms of acute Catarrh of the middle year is a running of the ear and may cause deafness. Treatment is to wash the year out twice a day with warm watter and Green soap wash the year with a ear surrenge and then dry the ear as well as possible.

Question.—Give symptoms and treatment of scarlatina. Name some of the most frequent complications.

Answer.—Scarlatina is a severe disease among Children they have high fever Paining almost all over and it is an infectious disease it is dangerous among children. Treatment is to give anti Pyrene and small doses of Calomel they are most Frequent found in large towns or cities.

Question.—Name three respiratory stimulants, and mention the diseases in which you would use them.

Answer.—We have the wine, milk and Soups, I would use them in Lagripp & Pneumonia.

Question.—Explain the physiologic action and therapeutic indications of nux vomica. What are the active principles?

Answer.—The Physiological action and Therapeutic indications of Nux Vomica is to excite the vagi nerves and make a person sick at his Stomach so as to vomit him.

Question.—What are hypnotics? Name three and give action of one.

Answer.—Hypnotics are where a person has lost controle of hisself it might be that he is Intoxicated or Insane, or overdose of Opium Intoxication is where Liquor has him bested and cannot do anything he looses controle of muscles and nerves.

Question.—Classify hyocin hydrobromate and give the dose.

Answer.—Hyocin hydrobromate is a nerve sedative it eases and rests your patient the dose is one half teaspoonfull.

Question.—Name the drugs which lower blood pressure and give indications for use.

Answer.—Anti Pyerine give it when the pulse is high.

Question.—What are the principal forms of bacteria and how do they differ in appearance?

Answer.—Bacteria differs in several ways its principle form if from an old Sore some in cuts bruises burns the Bacterea may live for several days it is hard to kill they may be in Maleria Typhoid Pneumonia Fevers Dyptheria.

Question.—Give Koch's postulates or rules in regard to bacterial cause of disease.

Answer.—well the bacteria gets into the system and sets up an eritation and they jest keep accumilateing and become more and more all the time if the Patient is old they are harder to destroy if the patient old wore out and broke down when they once get hold they accumilate very readily they will live several days in the Sun they are the cause of many diseases.

Question.—How would you differentiate dysentery from typhoid fever by bacteriologic test?

Answer.—I would differentiate dysentery and Typhoid fever by the Tongue being coated and the symptoms what ever that they might be if by the Bacteriological Test if I should find the Typhoid Bacill I would diagnose the case as Typhoid fever other wise I dont no jest how that I diagnose the case also by the stools.

Question.—Differentiate between pathogenic and non-pathogenic bacteria and give five examples of each.

Answer.—Pathogenic Bacteria always occurs occur in man it may be a cut broose Syphilitic Gangrene or Ghonorhea Non Pathogenic Bacteria is found in horses animals Guinea Pigs Rabbits and they may get the bacteria from some Stream of watter or from something that they have eaten a person could ketch it the same way or they could ketch it from sleeping with each other or being with each other from kissing and so forth.

Anticipating inquiries I will say that at the time the candidate took the examination he was apparently clothed and in his right mind. AN EXAMINER.

The Physiologic Action and Toxic Action of Acetanilid.

PHILADELPHIA, June 7, 1905.

To the Editor:—In THE JOURNAL, June 3, page 1790, appears the "Official Report on Acetanilid Mixtures" made by the Committee on Chemistry of the Council on Pharmacy and Chemistry of the American Medical Association. The report is signed by the individual members of the committee, who possess our full confidence, and who are recognized by all as fully competent to speak with authority on any subject connected with materia medica or medical chemistry. My object in writing at the present time is to call attention pointedly to this valuable report, and to express my great personal satisfaction and gratification, as a teacher of pharmacology, with the important work which the Council has inaugurated. I believe that the value of this work to American medicine can scarcely be overestimated. The Section on Pharmacology and Materia Medica has on several occasions, by resolution, called the attention of the Association to the crying need of enlightenment of the medical profession on the subject of the exact composition of proprietary remedies of secret composition, which have been so lavishly exploited and freely advertised in our medical journals. The fact that this work has at length been definitely undertaken is hailed with delight by every member of the Section of which I have the honor to be an ex-chairman; and probably also by every American physician who is interested in the scientific practice of medicine. It is acknowledged by all that the habit of prescribing pharmaceuticals of unknown composition is utterly unscientific and stultifying, and is opposed to all further progress in therapeutics. The new departure of THE JOURNAL in giving publicity to the results of examinations of secret proprietary preparations, thoughtlessly used by some physicians, is the first practical step toward the removal of this reproach,

which has assumed the proportion of a scandal, to American medicine.

In the carefully prepared article which appears as a supplement to the above mentioned report, entitled "Coal-Tar Products, Especially Acetanilid," you have done well in calling attention to the dangers following the incautious use of acetanilid. You have done me the honor of referring to me as opposing the theory that the antipyretic influence is to be explained by the primary action of acetanilid on the corpus striatum, and as teaching the generally adopted view that its action is chiefly on the blood and circulation. In view of the importance of the subject, I feel that I am not trespassing too much on your space in asking permission to make my position a little more clear on the physiologic and toxic action of acetanilid.

The first point that attracts attention, from the clinical standpoint, is the marked discrepancy that is seen to exist among writers in regard to the size of the dose. The British Pharmacopeia states that the ordinary average dose for an adult is from one to three grains; Sydney Ringer makes it four or five grains; the United States Dispensatory, from five to fifteen grains. In Germany several grams have been given at a dose; doses of four grams have been followed by serious collapse and recovery. On the other hand, patients have been made cyanotic and have collapsed with two or three grains, and death has more than once been reported from five grains. Numerous deaths from headache powders also have been reported; the principal constituent of these powders, as we know, is acetanilid. Recovery has taken place after the ingestion of nearly an ounce (31.1 gr.).

While idiosyncrasy or unusual susceptibility may, to some degree, enter into the explanation, yet it seems inadequate to solve all cases. I would suggest that impurity of the acetanilid may be responsible for some accidents. Anilin is very poisonous and the presence of anilin compounds, due to imperfect purification, might produce symptoms of collapse from small doses. As stated in my work on "Materia Medica and Therapeutics" (Fifth Edition, page 10), "Toxic symptoms are especially apt to occur when acettoluid is present." In this connection, we may recall the fact that Ritsert (*Pharm-Zeitung*, 1890, p. 306) has called attention to the almost constant presence of toluidin in commercial anilin. (Quoted from United States Dispensatory, 18th Edition.) To return, however, to the subject of acetanilid itself, and to its proper physiologic action: As pointed out by T. Lauder Brunton, in his Croonian lectures on the "Relationship Between Chemical Structure and Physiologic Action" of drugs (1892), acetanilid has the simplest structure of any member of the group of aromatic bodies, and is the nearest to anilin, since it merely consists of anilin in which one atom of hydrogen is replaced by acetyl. It may also be regarded as ammonia in which one atom of hydrogen is replaced by phenyl and another by acetyl, hence it is also known as phenylacetamide. Structurally, therefore, acetanilid is closely related to phenacetin; but it is less soluble in water, and is more toxic than the latter. In its medical actions, it appears to be almost identical with antipyrin; but the latter does not cause alteration in the red blood cells, with the formation of methemaglobin, as acetanilid and its congeners do. This action is due to the decomposition of acetanilid in the blood and the liberation of paramidophenol, or a similar derivative. This action also occurs, although more slowly, in the case of phenacetin and its allies, and is absent after antipyrin (as stated by Cushny). The toxic action of comparatively small doses of acetanilid is thus explained. Small quantities cause the formation of methemaglobin within the blood cells, which remain intact; but larger doses destroy the blood cells and set free the methemaglobin in the plasma. Part of this, in escaping through the kidneys, may excite nephritis; and set up albuminuria, hemaglobinuria, or hematuria.

Without pursuing this interesting topic further, I would merely express my cordial agreement with the views expressed in the article referred to, especially the following paragraphs:

"That the action of acetanilid is more pronounced on the blood than on any other part of the system is generally recognized. Consequently, its effects on the circulation, respiration, temperature, and elimination are all probably secondary to the blood changes, etc."

In conclusion, I wish to emphasize your final word of warning as to the cautious use of the drug, especially when the personal idiosyncrasy, or degree of susceptibility, to the toxic action of acetanilid is unknown. Compounds, or mixtures, of acetanilid with soda, ammonia, or other comparatively harmless substances, should not be administered in large doses indiscriminately, simply because they are advertised as being "entirely free from depressing action on the heart and circulation."

JOHN V. SHOEMAKER.

1519 Walnut Street.

Too Few Physicians—Hardly.

To the Editor.—An article has been going the rounds of the daily press, purporting to be an interview with me, bewailing the prospective scarcity of physicians. No such interview was ever held. The only grounds that could ever have existed for such an article was that while I was talking to another physician, I congratulated the people that good, yes, first-class medical schools would have fewer graduates owing to the fact that preliminary requirements and the standard of teaching had increased to such an extent that numbers would not rush to these colleges as had been the case before the rise in requirements. It is quality and not quantity that is needed. I have stood for quality all my life. I endorse the sentiment in your editorial.[1] "Too few physicians? Hardly."

Yours truly,

A. W. MCALESTER.

"Epilepsy of Syphilitic Origin."

PITTSBURG, June 9, 1905.

To the Editor:—The statement of Dr. John T. Moore in THE JOURNAL, June 10, p. 1855, that "practically all authorities agree that epilepsy, coming on during adult life, unless directly traceable to injury, should be regarded as syphilitic in character" ought not to pass without protest. Certainly the possibility of syphilis should be carefully considered; but there are other causes, among them innocent arteriosclerosis certainly may be reckoned and it would be wrong to give prolonged antisyphilitic treatment in all cases of epilepsy in which the attacks first appear in adult life and which are not traceable to injury.

THEODORE DILLER.

Report of Acetanilid Mixtures.

BROOKLYN, June 8, 1905.

To the Editor:—Allow me, as a subscriber to THE JOURNAL, to add my word of approbation for the work of the Committee on Chemistry. The results of this investigation are most profitable to us all as practicing physicians, and perhaps the word of good cheer for this undertaking from many quarters will not be amiss. I only hope that this work may continue.

HARRIS MOAK.

Whereabouts of Mr. Orriss Wanted.

PRINCESS ANNE, MD., June 10, 1905.

To the Editor:—A Mr. A. W. Orriss is operating among physicians, exchanging old medical books for new ones. Will any one knowing the whereabouts of such a person kindly communicate with

CHAS. W. WAINWRIGHT, M.D.

Association News

Additional Through Train on Canadian Pacific.

To accommodate a number of members who wish to go to the Portland session over the Canadian Pacific Railway, that road announces that a special sleeping car for physicians and their friends will be attached to their train leaving St. Paul at 9:05 a. m., Tuesday, July 4, reaching Banff, Friday at 7:06 a. m.; Vancouver, Saturday at 10:45 a. m., and Seattle via Victoria and Puget Sound at 10:45 Saturday evening or all-

1. THE JOURNAL, May 27, 1905, p. 1689.

rail by way of Mission Junction, at 5:50 p. m. Saturday. Stopovers may be made at the various mountain resorts. Application for sleeping car space should be made at once to A. C. Shaw, 232 South Clark Street, Chicago. The beauties of this route were described in the Portland issue of THE JOURNAL, June 3, 1905, pages 1761-1779.

To Portland via San Francisco.

A number of members expect to go to Portland by way of San Francisco, stopping at the meeting of the American Surgical Association, to be held in the latter city July 4-7. The Chicago, Union Pacific and Northwestern Line will run a special car or cars on their through train, leaving Chicago Thursday, June 29, 8:02 p. m., Des Moines, Friday, June 30, 3:00 a. m., and Omaha, 9:15 a. m., Ogden, Saturday, July 1, 3:30 p. m., and arriving at San Francisco, Sunday, July 2, 5:50 p. m. The same schedule without change of cars is in operation every night, but on June 29, arrangements have been made by Drs. J. B. Murphy, A. J. Ochsner, A. D. Bevan and E. W. Andrews of Chicago; D. S. Fairchild, Des Moines; A L. Wright, Carroll, Iowa; B. F. Jones, Omaha; Miles F. Porter, Ft. Wayne, Ind., and others to make the journey more pleasant by traveling together. One sleeper is to run from St. Paul and Minneapolis to Omaha and there to be attached to the regular train. Reservations may be made through Mr. H. A. Gross, general passenger agent, C. & N. W. Ry., 212 Clark St., Chicago, or through any nearer agent of that railroad or of the Union Pacific. From San Francisco the members of the party will go to Portland by the coast steamers or by the Southern Pacific's beautiful Mt. Shasta line. In this connection, see the Portland number, June 3, and also the article on routes April 22.

Marriages

EMIL LOFGREN, M.D., to Miss Alina Nelson, both of Rockford, Ill., June 7.

ROBERT R. WALLACE, M.D., to Miss Jean Leslie, both of Hamilton, Ont., June 1.

GEORGE A. ULRICH, M.D., to Miss Hester D. Ralston, both of Philadelphia, June 7.

AUGUSTINE PALMISANO, M.D., to Miss Sara Mary Demares, at Baltimore, June 7.

A. J. BURRIDGE, M.D., Winnipeg, Man., to Miss Duncan of Nelson, Man., June 1.

THOMAS HERBERT BELL, L.C.R.P., to Miss Minnie Darling of Toronto, Ont., June 1.

PHILIP J. DAVIES, M.D., to Miss Katherine Johnson, both of Scranton, Pa., June 1.

LOUIS F. O'NEILL, M.D., to Miss Mary F. Hanlon, both of Auburn, N. Y., June 6.

MERVYN ROSS F. TAYLOR, M.D., to Miss Jeanette Riley, both of Philadelphia, June 7.

GEORGE R. TABOR, M.D., to Miss Cordelia Ann Barton, both of Austin, Texas, June 1.

ORRIS F. STARR, M.D., Tulsa, I. T., to Miss Mary E. Hughes of Vinita, I. T., May 25.

ARTHUR C. KLENTGEN, M.D., Chicago, to Miss Mildred King of Belvidere, Ill., June 3.

JAMES M. DELL, M.D., Gainesville, Fla., to Miss Johnnie Liddon of Ocala, Fla., June 7.

J. CLAY ROSS, M.D., Louisville, Ky., to Miss Mamie Massie of Hopkinsville, Ky., June 6.

LILLIE ROSA MINOKA, M.D., Philadelphia, and Charles A. Hill of Oneida, Wis., June 6.

ROBERT M. LAPSLEY, M.D., Keokuk, Iowa, to Miss Lyda Hiller of Kahoka, Mo., June 7.

CHARLES H. CRETZMEYER, M.D., Algona, Iowa, to Miss Maude Lowe of Osceola, Iowa, June 5.

DANIEL W. LAYMAN, M.D., Indianapolis, to Miss Maude Carroll, at Lynchburg, Va., June 7.

HOWARD ROY HESS, M.D., Sidney, Ill., to May Katherine Gilmore of Rock Island, Ill., June 8.

JOHN NELLIS DALY, M.D., Orangeville, Ill., to Miss Maude Hoyman of Freeport, Ill., June 1.

CARL KLEMER, M.D., Faribault, Minn., to Miss Anna Burnham of Red Wing, Minn., June 6.

CHARLES BLEDSOE CRUTE, M.D., to Miss Elizabeth Robertson Martin, at Farmville, Va., June 7.

RALPH BENJAMIN COX, M.D., to Miss Florence Bertha Hough, both of Collinsville, Conn., June 1.

WILLIAM DUDLEY SPEARMAN, M.D., to Miss Edna Gunter, both of Social Circle, Ga., June 14.

JOHN W. LAIRD, M.D., Mount Pleasant, Iowa, to Miss Ora Alton of Hillsboro, Iowa, June 14.

COMPTOM RIELY, M.D., Baltimore, to Miss Estelle Randolph Hughes, at Cambridge, Md., June 6.

COLEMAN L. HOFFMAN, M.D., Rockton, Ill., to Miss Sarah Olivia Paine, of Iowa City, June 1.

JAMES EDWARD COGAN, M.D., to Miss Katherine May Gleason, both of Cleveland, Ohio, June 1.

CHARLES C. STAUFFER, M.D., Harrisburg, Pa., to Miss Hanna G. Henry, of Zoyertown, Pa., June 1.

FRANK LOUIS STILLMAN, M.D., to Miss Elouise Landon Converse, both of Columbus, Ohio, May 30.

ALVAN W. SHERRILL, M.D., Markleton, Pa., to Miss Mary Elizabeth Jones of Allegheny, Pa., June 7.

JAMES J. P. ARMSTRONG, M.D., to Mrs. M. E. Skipper, both of Douglas, Ariz., at Crowley, La., June 1.

HERMAN EDWIN HASSELTINE, M.D., New York, to Miss Bertha Margery Mohl of Baltimore, June 6.

WILLIAM G. SMITH, M.D., Ravenna, Ohio, to Mrs. Mae E. Sawyer of Kent, Ohio, at Ravenna, June 1.

HARRIS ROYAL MOORE, M.D., Burlington, N. C., to Miss Alice Mutter Cheek of Henderson, N. C., June 15.

LUTHER JERRELL HEAD, M.D., Penola, Va., to Miss Lucy Gwynn Fox, in King William County, Va., June 7.

JAMES A. REA, M.D., Wellington, Kan., to Miss Kate Howe of Lamont, Iowa, at Newkirk, Okla., May 28.

NORMAN B. ALEXANDER, M.D., London, Ont., to Miss Maude Amelia Somerville of South London, Ont., June 3.

EARL D. KILMER, M.D., Rushville, N. Y., to Miss Marie Parsons of Walsall, England, at Rochester, N. Y., May 29.

JOHN H. KERN, M.D., North St. Louis, Mo., to Miss Rosamond Reck of Spragueville, Iowa, at Warrenton, Mo., June 6.

Deaths

Joseph M. Wishard, M.D. Medical College of Ohio, Cincinnati, 1857, said to have been the oldest member of the Johnson County Medical Society and one of the oldest members of the Indiana State Medical Society; surgeon of the Fifth Indiana Volunteer Cavalry during the Civil war, and for several months a prisoner in Libby Prison, died at his home in Greenwood, Ind., May 31, from the effects of a fall 20 months ago in which he dislocated his thigh, aged 77.

Lawrence C. Swift, M.D. College of Physicians and Surgeons in the City of New York, 1878, a member of the American Medical Association; secretary of the Berkshire District (Mass.) Medical Society; associate medical examiner for central Berkshire county, died at his home in Pittsfield, June 1, from cerebrospinal meningitis, after an illness of four days, aged 53.

Benjamin Knight, M.D. Harvard University Medical School, Boston, 1869, for many years local surgeon of the South Pacific Coast and Southern Pacific railroads; a veteran of the Civil War; state senator in 1883 and president pro tem. of the Senate, died at his home in Santa Cruz, Cal., June 2, after a long illness following influenza, aged 68.

Matthew Watson Donavin, M.D. University of Maryland School of Medicine, Baltimore, 1866, some time coroner of Baltimore County, member of the Baltimore City Council, member of the state legislature, and police magistrate, died at his home in Baltimore, June 4, aged 67.

Chauncey S. Burr, M.D. Long Island College Hospital, Brooklyn, N. Y., 1865, major and surgeon of the Twenty-third Illinois Volunteer Infantry in the Civil War, first mayor of Mitchell, S. D., died at his home in Chicago, June 4, three days after a surgical operation, aged 65.

John Brock Darling, M.D. Vermont Medical College, Woodstock, 1848, a practitioner of South Ryegate, Vt, for 55 years, died at his home in that place, February 12, from chronic cystitis, and senile hypertrophy of the heart, after an illness of six months, aged 82.

Hiland A. Weed, M.D. New York University, New York City, 1857, assistant surgeon in the Seventeenth, and surgeon of the Twenty-fifth New York Volunteer Infantry during the Civil War, died recently at his home in Fayetteville, N. Y., aged 71.

James D. Taylor, M.D. St. Louis Medical College, 1861, surgeon of First Missouri Cavalry, C. S. A., in the Civil War, and for more than 40 years a resident of Richmond, Mo., died at his home in that city, May 26, after a short illness, aged 70.

Marion Wells Thoms, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1898, a medical missionary of the Reformed Church, died at her station on Bahrein Island in the Persian Gulf, from typhoid fever, aged 31.

Vivian E. Zimmerman, M.D. University of Nashville Medical Department, 1901, of Corcordia, Kan., died at the home of his father near Jamestown, Kan., May 21, from consumption, after a long illness, aged 27.

Whitfield L. May, M.D. Jefferson Medical College, Philadelphia, formerly of Lyons, Kan., was found dead at Eureka, Cal., May 25, from heart disease, with alcoholism as a contributory cause, aged 53.

Harry H. East, M.D. Barnes Medical College, St. Louis, 1890, of Xenia, Ill., while suffering from melancholia, cut his throat at the Alexian Brothers' Hospital, St. Louis, and died June 2, aged 45.

Edgar Macklin, M.D., honor graduate of the Western University, Medical Department, London, Ont., 1890, died May 29 at London, Ont. He had served as a surgeon on the Allan Steamship Line.

William J. Sheppard, M.D. University of Wooster Medical Department, Cleveland, Ohio, 1870, of Cleveland, died at Lakeside Hospital in that city, May 29, from cancer, after a long illness, aged 62.

Francis Addison Day, M.D. University of Louisville, Tuley Medical Department, 1850, died at his home in Louisville, May 24, from nephritis, after an illness of sixteen months, aged 78.

A. Parker Muir, M.D. Albany (N. Y.) Medical College, 1896, for a long time a member of the staff of the Manhattan State Hospital, died recently and was buried in Albany, N. Y., June 4.

Charles B. Chesher, M.D. Cincinnati College of Medicine and Surgery, 1876, formerly superintendent of the Cleveland State Hospital, died at his home in Columbus, June 1, from heart disease.

William Isaac Goodin, M.D. Medical College of Ohio, Cincinnati, 1874, died at his home in Cincinnati, May 31, after a long period of invalidism from gastritis, aged 68.

Thomas H. B. Baker, M.D. University of Louisville Medical Department, 1876, died at his home in Pekin, Ind., June 1905, after an illness of about 3 months, aged 67.

DeWitt G. Lippincott, M.D. Jefferson Medical College, 1883, member of Orange County Medical Society, died at his home in Campbell Hall, N. Y., June 7, aged 44.

Chauncey B. Ostrander, M.D. (years of practice, Illinois), 1881, a practitioner of Fairbury, Ill., since 1850, died at his home in that city, May 30, aged 87.

Orville R. Baker, M.D. Ohio about 1849-1850, died at his home in Rutland, Vt., May 26, from senile debility, after an illness of two weeks, aged 81.

Jacob D. Kirby, M.D. Cincinnati, 1868, died at his home in Grand Junction, Iowa, from septicemia, January 30, after an illness of 20 days, aged 77.

Henry F. Crensheno, M.D. (years of practice, Ky.), 1893, for 35 years a practitioner of Mount Washington, Ky., died at his home in that place, June 8.

William K. Spiller, M.D. University of Nashville (Tenn.) Medical Department, 1874, died at his home in Bridgeport, Ala., May 25, aged 60.

Alonzo W. Marston, M.D. McGill University Medical Department, Montreal, 1871, died at his home in Hull, Que., April 3, from nephritis.

Henry F. Gorman, M.D. University Medical College of Kansas City, 1900, died at his home in Chickasha, I. T., June aged 57.

Jacob Price, M.D. Jefferson Medical College, Philadelphia, 1850, died at his residence in West Chester, Pa., June 9, aged 79.

N. F. Pierce, M.D. Kentucky School of Medicine, 1889, died suddenly at his home in Howard's Mill, Ky., June 2, aged 42.

John H. Tims, M.D. Examination Ohio, died suddenly at his home in Sparta, Ohio, May 23, from heart disease, aged 87.

Albert D. Getman, M.D. New York, 1883, died at his home in Oneonta, N. Y., May 23, from pneumonia, aged 46.

John Kossuth Oshley, M.D. (years of practice, Illinois), died at his home in Cisne, Ill., May 26, aged 80.

T. G. Flournoy, M.D. St. Louis Medical College, 189, died at his home in Pasadena, Cal., May 26, aged 67.

Julia A. D. Adams, M.D. Ohio, 1871, died in Palos Park, Ill., May 30, aged 74.

Deaths Abroad.

Ezio Sciamanna, M.D., one of the leading psychiatrists of Italy, died at Rome about May 20. He was one of the foremost figures in the International Congress of Psychology which closed its sessions at Rome, April 30.

A. Hilger, M.D., professor of pharmacy at Munich, died May 25, aged 66. He was one of the leaders in this branch of science in Germany, especially in physiologic chemistry.

Book Notice

MANUAL OF OPERATIVE SURGERY. By John Fairbairn Binnie, A.M., C.M., (Aberdeen), Professor of Surgery, Kansas City Medical College. With 559 Illustrations, a Number of Which Are Printed in Colors. Cloth. Pp. 644. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co. 1905.

The author is to be congratulated on having been able to condense so much valuable information within so few pages. This book is in a convenient form and size for ready reference and covers this rapidly growing field in a very thorough manner. The descriptions of operative procedures are short and clear. The book reflects throughout the personal views of the author and gives the reader the benefit of his large experience in sifting good from inferior methods. It also states from time to time the objections or disadvantages in such a concise manner that the book can not fail to be of great aid to the student as well as to those who employ the various methods in their daily surgical work. With but few exceptions, all of the latest operative methods are given. Not sufficient mention is made of the Andrews imbrication method for inguinal hernia nor of the Cushing operation for the removal of the Gasserian ganglion nor of the Pfannenstiel transverse incision for laparotomy. All instruments described in the text are well illustrated, but it is to be regretted that so few original illustrations have been employed. The description of the treatment of skull fractures and the operations for removal of tuberculous glands of the neck are exceedingly creditable. A brief review of the principal points in the surgical anatomy would be of great aid. With the exception of these minor details, the book is a very useful guide for the busy surgeon, as well as for the medical student.

Miscellany

ISTHMIAN SANITATION.

Letter from Secretary Taft to Colonel Gorgas Concerning Panama Matters.

WAR DEPARTMENT, WASHINGTON, D. C., April 25, 1905.

Col. W. C. Gorgas, Chief Sanitary Officer, Isthmian Canal Commission.

My Dear Colonel Gorgas:—I have read your letter of April 1, forwarded to me through the governor of the Canal Zone, and in response thereto beg to point out that under the new organization the difficulties which have confronted you in mak-

ing the sanitation of the Isthmus efficient must largely disappear.

The chief change will be in bringing to your door the power to buy supplies without any delay. The executive committee will be in constant session on the Isthmus, and whenever you desire extraordinary orders all you have to do is to apply to Governor Magoon, who can call the committee together and issue the order, even though the chairman, Mr. Shonts, be absent. Governor Magoon has already manifested his desire to accord with your wishes by increasing the salaries of your medical assistants. . . . With greater facilities for obtaining supplies I have no doubt that construction will go forward much more rapidly than it has heretofore. Judge Magoon will go down to the Isthmus on the thirteenth day of May and will be soon followed by Mr. Wallace and Mr. Shonts. The power is to be there, and proximity to power is what produces efficiency and quickness in action. The time spent here is taken up in reorganizing the office, which was in a state of inefficiency and chaos.

I think you are doing very well, indeed, in the suppression of yellow fever, and I hope that with the coming of supplies and of new conditions under which you will be less hampered than you have been heretofore by the absence of authority, your ability to deal with malarial fever and the whole problem of sanitation will be made apparent. You could not have any one to work with more anxious to comply with your desires than Judge Magoon. . . .

With congratulations on your good work, believe me, my dear doctor, Very sincerely yours,

WILLIAM H. TAFT.

[The above letter has recently come into our possession, with permission for its publication. It is interesting in that it shows the change that has taken place in the management of affairs on the Isthmian Canal Zone. A careful reading of the letter reveals the fact that underlying it is a recognition of the bad condition of affairs preceding the reorganization. For instance, this sentence is full of meaning, "The time spent here is taken up with reorganizing the office which was in a state of inefficiency and chaos." It is corroborative of some of the charges made by Dr. Reed in his report. The letter further officially informs us of the enlarged authority and opportunities that have been granted to the chief sanitary officer, Dr. Gorgas, by the new commission.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

NEW TECHNIC FOR CIRCUMCISION.

ANCON, CANAL ZONE, May 29, 1905.

To the Editor: For several years I have been doing an operation for circumcision that I do not see described in any of the text-books on surgery. The method, so far as I know, is an original one, and unless some one else has described the technic of the operation, or a similar one, I shall be glad to publish the result of my cases. The operation as done by me is briefly as follows: 1. The mons jovis is shaven and prepared in the usual way. 2. An incision circumnavigates the penis, going through the skin only, at the root of the organ. 3. The skin is dissected and drawn back to correspond with the length of the foreskin. 4. A second incision is made as in the second step. 5. The sutures are so placed as to allow perfect apposition. The advantages of this simple operation are apparent, and I should be grateful if you would tell me, through THE JOURNAL, whether this or a similar operation has ever been advised. M. E. GARDNER, M.D.

ANSWER.—We are unable to find this method of operating described in any of the text-books on surgery. The method does not seem to us to be adapted for children nor even for adults unless the prepuce is very short, because the tightness of the foreskin and the lesions would not be affected by it. The object of circumcision is to make the prepuce loose enough to be readily retracted, not to shorten it so that it will remain retracted.

PRACTICE LAWS IN ALBERTA, CANADA.

TULSA, I. T., May 30, 1905.

To the Editor:—Please state the requirements of the laws governing the practice of medicine and surgery in the province of Alberta, Canada. G. R. B.

ANSWER.—The Council of the College of Physicians and Surgeons of the Northwest Territories admits on the register: 1. Any person possessing a diploma from any medical school in Great Britain and Ireland having power to grant such diploma, and who produces such diploma and furnishes satisfactory evidence of identification. 2. Any member of an incorporated college of physicians and surgeons of any province of the Dominion of Canada. 3. Any person producing a diploma from any recognized medical college requiring a four years' course; provided, the applicant passes a satisfactory examination before the council. The registrar is Dr. J. D. Lafferty, Calgary.

OSTEOPATHS ARE GETTING THERE FAST.

We have received a circular that is being sent out by an osteopath of Kansas City which indicates that osteopaths not only are using medicines, but also are right in front with the unadulterated nostrum exploiters:

> For the past five years I have been making a specialty of skin diseases, and am able to say that we can handle this class of practice just as successfully as we do the others. Osteopaths all over the country have used my antiseptic treatment and with the fullest measure of success.
>
> This antiseptic is made according to the requirements of each case and in the way best suited to the case. I now make it as a liquid, a light lotion, a heavy lotion, a liquid ointment, and an ointment. You tell me of the case and I will give you what is best according to my experience. And you may rest assured that I give your cases the same attention I give my own. [Probably true.] Seven packages, retailed at $1.00 each, constitutes a month's treatment for Acne, Eczema or Psoriasis. It lasts the average case, from six to eight weeks, and I sell it to you for $5.00. To get the best results the patient should be required to pay for the antiseptic. [This is very important.] I find that diet is an essential in the successful treatment of all skin diseases and in each instance I suggest the diet in full.
>
> I have often been asked to supply the antiseptic in a way that it could be used whenever an antiseptic is required. For a short time I am going to sell a full quart of the preparation for $2.00. You should sell it in four ounce bottles at $1.00 each, or $8.00 for the quart. You simply can't get results if you give it away. [What results? Dollars?] I have tried it often enough to know. This quart can be used for any ailment excepting Acne, Eczema or Psoriasis—but it is not made in the right way or of a sufficient strength for either of these ailments.

Then follow the usual testimonials, of which the following is a sample:

> I used your antiseptic on a very bad case of Barbers' Itch, and at the end of three weeks' time a cure was effected. I gave Osteopathic treatment to equalize the circulation and used the liquid full strength.—Drs. Hook & Hook, Belding, Mich.

The names of these and the other individuals are not in any of the late medical directories. If we are to judge by some of the testimonials, the osteopaths are using medicines in states (Kentucky, Missouri, Michigan and Pennsylvania) in which they are licensed on condition that they do not use drugs.

State Boards of Registration

COMING EXAMINATIONS.

Board Representing the President and Fellows of the Medical Society of Delaware, Dover, June 20-22. Board Representing the Homeopathic Medical Society of Delaware, Wilmington, June 20-22. Secretary of the Medical Council of Delaware, P. W. Tomlinson, M.D., Wilmington.

State Board of Medical Examiners of New Jersey, Trenton, June 20-21. Secretary, E. L. B. Godfrey, M.D., Camden.

Medical Examining Board of Virginia, Richmond, June 20-24. Secretary, R. S. Martin, M.D., Stuart.

Board of Medical Examiners of Maryland, Baltimore, June 21-24. Secretary, J. McP. Scott, M.D., Hagerstown.

Medical Council of Pennsylvania, Philadelphia and Pittsburg, June 27. Secretary of the Medical Council, H. C. Shaeffer, M.D., Harrisburg.

Board of Medical Examiners, Central District, I. T., South McAlester, I. T., July 3. Secretary, B. W. Caldwell, Hugo.

Board of Medical Examiners of Arizona, Phoenix, Ariz., July 3-4. Secretary, A. Martin, Phoenix.

Utah State Medical Examiners, Salt Lake City, Utah, July 3-4. Secretary, R. W. Fisher, Salt Lake City.

North Dakota State Medical Examining Board, Grand Forks, July 5. Secretary, H. M. Wheeler, Grand Forks.

State Medical Examining Board of Washington, Seattle, Wash., July 5. Secretary, C. W. Sharples, Seattle.

State Medical Examining Boards of the Regents, State House, Concord, N. H., July 7-8. Regent, H. C. Morrison, Concord.

State Medical Board of the Arkansas Medical Society, Little Rock, July 11. Secretary, J. P. Runyan, Little Rock.

Rhode Island State Board of Health, State House at Providence, commencing at 9 a. m., July 11. Secretary, G. T. Swarts, State House, Providence.

Wisconsin Board of Medical Examiners, Park Hotel, Madison, Wis., July 11. Secretary, F. A. Forsbeck, Milwaukee.

State of Connecticut Medical Examining Board, City Hall, New Haven, Conn., July 11-12. Secretary, C. A. Tuttle, New Haven.

Maine Board of Registration of Medicine, State House, Augusta, Maine, July 11-12. Secretary, Wm. J. Maybury, Saco.

Vermont State Board of Medical Registration, Y. M. C. A. Hall, Burlington, Vt., July 11-12-13. Secretary, W. Scott May, Underhill.

Kansas State Board of Medical Registration and Examiners, State House, Topeka, Kan., July 12-13. Secretary, G. F. Johnston, Lakin.

South Dakota Board of Medical Examiners, Sioux Falls, S. Dak., July 12 13. Secretary, H. E. McNutt, Aberdeen.

Board of Medical Supervisors, Washington, D. C., July 13. Secretary, Wm. C. Woodward, Health Department, Washington.

California State Board of Medical Examiners, San Francisco and Los Angeles, Cal., July 19. Secretary, C. L. Tisdale, San Francisco.

North Carolina May Report.—Dr. George W. Pressly, secretary of the Board of Medical Examiners of the State of North Carolina, reports the written examination held at Greensboro, May 17-23, 1905. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 80. The total number of applicants examined was 133, of whom 92 passed, 40 failed and 1 withdrew. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Rush Medical College	(1897)	92
Woman's Med. Coll. of Pennsylvania	(1905)	91.8
University of Alabama	(1890)	82.2
University of Pennsylvania	(1902)	87.2
Harvard University	(1899)	89.5
Med. Coll. of South Carolina	(1900)	80
University of Nashville	(1904)	80.1
Washington University	(1902)	87.8
Medico-Chirurgical, Philadelphia	(1905)	87.7
Northwestern University	(1896)	80
Columbian University	(1904)	89.7
Univ. of Copenhagen, Denmark	(1869)	80
Coll. of P. & S., Baltimore	(1905)	80
Tennessee Med. Coll.	(1901) 81.4,	80
McGill University	(1876) 80; (1899)	83.1
University of the South	(1903)	83.1
Tulane University	(1905) 85.5,	80
Louisville Med. Coll.	(1905) 80,	80
Coll. of P. & S., New York	(1904) 91.1; (1894)	94.5
Johns Hopkins University	(1904) 90.8; (1900)	81.7
Baltimore Med. Coll.	(1896) 80; (1905)	80
Leonard Med. Coll. (1905) 84.5, 80, 86.1; (1904) 80; (1902)		80
Jefferson Med. Coll. (1904) 84.8, 88.2; (1905) 92.7, 80, 86.2,		89.5
University of Virginia (1902) 80.2; (1903) 90.1; (1897)		87.8
Med. Coll. of Virginia	(1903) 80; (1905) 89.2,	85.1
University Coll. of Med. Richmond (1900) 84.4; (1903) 93.1; (1905) 81.4, 85.2, 86.4, 89.4, 89.1, 91.5		
University of North Carolina (1905) 91.2, 80, 80, 80, 85.7,		95.8
University of Maryland (1905) 85.8, 90.1, 82.4, 88.1, 80, 82, 86.2, 87.8, 80; (1904) 80; (1900) 80.7		
North Carolina Med. Coll. (1905) 80, 82, 84.1, 83.4, 86.5, 89.2, 85.4, 88.2, 87.7, 92.4, 92.1, 88.2, 88.7, 82.2, 80, 80, 80, 81.2, 84.1, 93.4, 80, 80		
Meharry Med. Coll.	(1904)	60
Hosp. Coll. of Med. Louisville	(1898)	56.7
Maryland Med. Coll.	(1901)	59.5
Atlanta Med. Coll.	(1896)	65.5
Vanderbilt University	(1893)	65.5
Tennessee Med. Coll.	(1902)	63.5
University of North Carolina	(1905)	76.7
Coll. of P. & S. Baltimore	(1905)	71
Med. Coll. of Virginia	(1905) 70,	69.7
University of Tennessee	(1902) 72.8; (1904)	68
Coll. of P. & S., Atlanta	(1902) 64.1; (1900)	74.2
University of Kentucky	(1904) 66.7; (1905)	75.2
Knoxville Med. Coll.	(1904) 68.1	70.1
Chattanooga Med. Coll. (1900) 66.8; (1903) 45; (1904) 70.5; (1905) 74.8		
University of Maryland (1905) 75.2, 76.1; (1904) 63.2, 71.1; (1903) 76.1		
Leonard Med. Coll. (1902) 68.1; (1905) 70, 67.1, 75, 74.4,		70.1
North Carolina Med. Coll. (1905) 67.5, 74.5, 70.4, 75; (1903) 77; (1902) 72.1. One withdrew from examination.		

The following questions were asked:

CHEMISTRY.

1. What are hydrates? 2. Distinguish between deliquescent and efflorescent substances. 3. What is alcoholic fermentation? 4. Give name and formula of three acids used in medicine. 5. Write a chemical equation. 6. Chemical antidote for nitrate of silver. 7. What is contained in the so-called hard waters? 8. Name the inorganic salts of the blood. 9. Normal temperature of the body in centigrade scale. 10. Convert 1 c.c. of water to minims. 11. What is iodoform chemically? 12. Complete the following:

$K_2CO_3 + H_2O + CO_2 =$

$Ca\ Cl_2 + Na_2\ CO_3 =$

$2\ C_2\ H_5\ O\ H + HNO_3 =$

(Answer and ten questions and *only* ten.)

SURGERY.

1. Give etiology of erysipelas, carbuncle, septicemia. 2. Give general plan of treatment in cases of inflammation and suppuration. 3. Give the general and local treatment of hemorrhage. 4. Give in detail the preparation of a patient for laparotomy. 5. Give treatment of acute suppurative osteomyelitis. 6. Give treatment of compound fracture of lower one-third of femur. 7. Describe circular method of amputation through upper one-third of leg. 8. Give causes and symptoms of compression of brain. 9. Diagnosis of penetrating wounds of abdomen.

PRACTICE OF MEDICINE.

1. Give etiology of lobar pneumonia. 2. Give the symptoms of hemorrhage in typhoid fever. 3. Define locomotor ataxia and give the anatomic lesion. 4. Give treatment for sciatica. 5. Where is the point of tenderness in appendicitis, in hepatic colic (cholecystalgia), in nephritic colic (nephralgia) of right side? 6. Give treatment for gonorrheal arthritis. 7. Give treatment for aortic stenosis. 8. Give symptoms of tubercular kidney. 9. Write a single prescription for erysipelas. 10. Outline briefly the treatment of glycosuria.

OBSTETRICS, GYNECOLOGY AND PEDIATRICS.

1. The true pelvis—describe the superior strait, the inferior strait, giving boundaries of each. 2. Describe preparation for delivery after labor has actually begun, the necessary articles to be gotten together, preparation of patient, physician, patient's bed, etc. 3. Give treatment of delay in the first stage of labor. Treatment for antepartum eclampsia at sixth or seventh month. 4. Give differential diagnosis between pregnancy at the third month and an interstitial fibroid of the uterus. 5. Give etiology and symptoms of pelvic cellulitis. 6. Give symptoms and treatment of endometritis. 7. Give directions for care of new-born baby for the first twelve hours after birth. 8. Give symptoms and treatment of acute catarrhal bronchitis in a child two years old. 9. Give etiology, lesions, prophylaxis and treatment of acute gastroenteric infection (summer diarrhea in children). (Answer any eight questions and *only* eight.)

MATERIA MEDICA AND THERAPEUTICS.

1. Give dose and physiologic action of ipecacuanha, mention alkaloids. 2. Dose and physiologic action of chloral hydrate. 3. Give preparations of nux vomica, doses, its principal alkaloid, symptoms of lethal dose. 4. Give technical name of Jamestown weed, its alkaloids, symptoms and treatment of poisoning by. 5. Cocain, dose, toxic symptoms and treatment. 6. Gelsemium, dose of tr. and f. e., its alkaloid and dose, symptoms and treatment in case of poisoning. 7. Physiologic action of cannabis indica. 8. Explain effect of acetanilid and the cyanosis it sometimes produces, dose. 9. Give dose and therapeutic uses of spartein. 10. If any reason why these combinations should not be used, give them. (1) Pulv. ipec. acid. tannic, plumbi acet. (2) Antipyrin, spts. æther nitrosi, (3) Tr. ferri., tr. nuc. vom., tr. cinch. co. (4) Cocain hyd., sodii borat., aq. rosae. (5) Potassii permang., hydrogen perox, aq. destil. (6) Spts. turpentine, tr. iodin, lin. chlorof.

ANATOMY AND HISTOLOGY.

1. Describe the upper extremity of the humerus. 2. Describe the middle meningeal artery (meningea magna) after it emerges from the foramen spinosum, giving its distribution; state at what point you would trephine to stop hemorrhage from this vessel. 3. Describe the island of Riel (or insula) or central lobe. 4. Describe and give the relations of the tonsils. 5. Describe and give relations of the internal mammary artery. 6. Give the relations of the left kidney. 7. What are the boundaries of the femoral canal and give the relations which it bears to the deep epigastric and obturator arteries and the spermatic cord. 8. Give attachments of the ligaments of the hip joint. 9. Give the origin and distribution of the fourth pair of cranial nerves (pathetic nerve). 10. Give the distribution of the musculo-spiral nerve and name its branches. (Answer only eight questions.)

PHYSIOLOGY AND HYGIENE.

1. What action has pancreatic juice on nitrogenized substances? 2. How is inspired oxygen absorbed into the system? 3. What conditions modify temperature in the body? 4. Name the vascular or ductless glands. 5. Give origin and functions of bile. 6. Give functions of liver. 7. Give functions of cerebellum. 8. Give functions of anterior roots of spinal cord. 9. What nerve endows the tongue with motion? 10. Differentiate between antiseptic and a disinfectant.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending June 10, 1905:

Bruns, Earl H., asst.-surgeon, assigned to duty at the Sequoia National Park, Cal., relieving Assistant Surgeon Kiersted.

Kiersted, Henry S., asst.-surgeon, on being relieved from duty at the Sequoia National Park, Cal., will return to station, Presidio of Monterey, Cal.

Gibner, Herbert C., asst.-surgeon assigned to duty at the Yosemite National Park, Cal., to relieve Major Reynolds, surgeon.

Reynolds, F. P., surgeon, relieved from duty at Yosemite National Park, and to return to station at Presidio of San Francisco.

Smith, Herbert M., asst.-surgeon, relieved from further duty at Fort McDowell, Cal., and ordered to U. S. Army General Hospital, Presidio of San Francisco, for duty.

Blanchard, R. M., asst.-surgeon, left Fort Thomas, Ky., on ten days' leave of absence.

Roberts, William, asst.-surgeon, relieved from temporary duty at Fort Greble, R. I., and to return to his station, Fort Hamilton, N. Y.

Shimer, Ira A., asst.-surgeon, left Washington, D. C., en route to Ancon, Isthmian Canal Zone, for duty with the Isthmian Canal Commission.

Reilly, John J., asst.-surgeon, relieved from further duty at Jackson Barracks, La., and ordered to Fort Slocum, N. Y.

Dale, Frederick A., asst.-surgeon, relieved from duty at U. S. Army General Hospital, Washington Barracks, D. C., and ordered to Fort Walla Walla, Wash., for duty.

Chidester, W. C., asst.-surgeon, ordered to accompany Companies A and B, First Battalion Engineers, from Fort Leavenworth, Kan., to San Francisco; on completion of this duty to revert to status of leave of absence.

Powell, Junius L., surgeon, left Fort Hamilton, N. Y., on ten days' leave of absence.

Bartlett, C. J., asst.-surgeon, reported for temporary duty as attending surgeon and examiner of recruits, San Francisco.

Porter, R. S., asst.-surgeon, left Fort Niobrara, Neb., on leave of absence.

Reno, Wm. W., asst.-surgeon, relieved from temporary duty at Washington Barracks, D. C., and from duty with troops at Saunder's Ridge, Md., and ordered to return to his station. Fort Myer, Va.

Crabtree, Geo. H., asst.-surgeon, ordered to proceed from Fort Jay, N. Y., to Fort Monroe, Va., for duty in connection with the joint Army and Navy exercises.

Brooke, Roger, Jr., asst.-surgeon, having arrived at San Francisco, from Manilla, P. I., will report to commanding officer, Fort Bayard, N. M., for duty at the General Hospital.

Dale, Frederick A., asst.-surgeon, granted two months and fifteen days' leave of absence.

Ames, Roger P., contract surgeon, granted leave of absence for one month.

Macy, Fred S., contract surgeon, granted leave of absence for one month.

Sievers, Robert E., contract surgeon, leave of absence extended twenty days.

Slater, Ernest F., contract surgeon, leave of absence granted for one month sixteen days, with permission to go beyond sea.

Hogue, Gustavus I., contract surgeon, leave of absence granted for one month.

Dillon, G. Parker, contract surgeon, relieved at the General Hospital, Presidio of San Francisco, and ordered to duty at Fort McDowell, Cal.

Scott, Sidney L., contract surgeon, ordered from Fredericksburg, Va., to Washington Barracks, D. C., for duty with troops at Camp Saunders, Glen Burnie, Md.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending June 10, 1905:

Stitt, E. R., surgeon, detached from the Naval Museum of Hygiene and Medical School, Washington, D. C., June 5, and ordered to the Naval Hospital, Canacao, P. I., sailing from New York about June 10.

Eytinge, E. C. J., asst.-surgeon, ordered to the Naval Hospital, New York.

Farwell, W. G., asst.-surgeon, detached from the Naval Hospital, New York, and ordered to the *Brooklyn*.

Bishop, L. W., P. A. surgeon, detached from the Naval Museum of Hygiene and Medical School, Washington, D. C., and ordered to the *Dubuque*.

Murphy, J. F., asst.-surgeon, detached from the *Dubuque* and ordered to continue duties on the *Hancock*.

Mayers, G. M., asst.-surgeon, ordered to Washington, D. C., for examination for promotion, and then to wait orders.

The following passed assistant surgeons have been ordered to report to the president of the Naval and Medical Examining Boards for examination for promotion, June 26, 1905, and then to wait orders: F. M. Furlong, J. F. Leys, W. M. Garton, F. L. Benton and J. C. Thompson.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending, June 7, 1905:

Sawtelle, H. W., surgeon, relieved from duty at Purveying Depot, New York, and directed to proceed to Washington, D. C., for special temporary duty.

Stoner, G. W., surgeon, to proceed along Canadian border as far as Sault Ste Marie, Mich., stopping at intermediate points, especially Quebec, Montreal, Niagara Falls and Detroit, on special duty.

Oakley, J. H., P. A. surgeon, detailed as inspector of unserviceable property at the U. S. Marine Hospital, Port Townsend, Wash.

Clark, Tallaferro, P. A. surgeon, granted leave of absence for three days from June 7, 1905, under Paragraph 191 of the Regulations.

Kerr, J. W., P. A. surgeon, granted leave of absence for one month from June 15.

Salmon, T. W., asst.-surgeon, granted leave of absence for five days from June 4, 1905, under Paragraph 191 of the Regulations.

Spratt, R. D., asst.-surgeon, relieved from duty at New Orleans, La., and assigned to duty at Louisville, Ky., effective June 15, 1904.

Porter, J. Y., sanitary inspector, granted leave of absence for seven days from June 20.

Bean, L. C., acting asst.-surgeon, granted leave of absence for three days from June 8.

McConnell, E. F., acting asst.-surgeon, relieved from duty at Nuevitas, Cuba, and directed to proceed to New York and report to Surgeon G. W. Stoner, Ellis Island, for duty.

Mason, W. C., acting asst.-surgeon, granted leave of absence for five days from June 26.

Ransom, S. A., acting asst.-surgeon, granted leave of absence for two days from May 3.

Achenbach, J., pharmacist, granted leave of absence for sixteen days from June 13.

Health Reports.

The following cases of smallpox, yellow fever and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended June 10, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, May 20-27, 1 case.
Florida: Jacksonville, May 27-June 3, 3 cases.
Illinois: Chicago, May 27-June 3, 18 cases; Danville, May 5-31, 7 cases; Galesburg, May 27-June 3, 3 cases.
Kansas: Wichita, April 29-May 27, 21 cases.
Louisiana: New Orleans, May 28-June 3, 5 cases.
Massachusetts: Haverhill, May 27-June 3, 1 case.
Michigan: Grand Rapids, May 27-June 3, 10 cases, 1 death.
Nebraska: Omaha, May 27-June 3, 2 cases.
New York: New York, May 27-June 3, 1 case.
Ohio: Toledo, May 20-June 3, 15 cases.
Pennsylvania: May 27-June 3, Altoona, 1 case, imported; Lebanon, 1 case; York, 10 cases.
South Carolina: Greenville, May 20-27, 2 cases.
Tennessee: May 27-June 3, Memphis, 1 case; Nashville, 5 cases.
Utah: Ogden, May 1-31, 7 cases.
Wisconsin: Appleton, May 27-June 3, 2 cases; Milwaukee, May 20-27, 3 cases.

SMALLPOX—INSULAR.

Philippine Islands. Manila, April 8-29, 3 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, April 15-22, 1 case.
Belgium: Ghent, April 29-May 6, 1 death.
Brazil: Rio de Janeiro, May 7-14, 8 cases, 3 deaths.
China: Hongkong, April 8-15, 3 cases, 1 death.
Ecuador: Guayaquil, May 2-9, 3 deaths.
France: Paris, May 13-20, 18 cases, 2 deaths.
Great Britain: Bristol, May 6-20, 2 cases; Liverpool, May 6-13, 1 case; London, May 13-20, 3 cases, 1 death; New Castle-on-Tyne, May 6-13, 7 cases; South Shields, May 6-20, 5 cases.
India: Bombay, May 2-9, 37 deaths; Calcutta, April 15-May 6, 24 deaths; Karachi, April 30-May 7, 11 cases, 3 deaths; Madras, April 29-May 5, 4 deaths.
Italy: General, May 4-11, 111 cases; Catania, May 18-25, 7 deaths; Palermo, May 13-20, 1 case.
Japan: Yokohama, April 2-9, 1 case.
Russia: Moscow, May 6-13, 7 cases, 2 deaths; Odessa, April 22-May 6, 15 cases, 4 deaths; St. Petersburg, April 15-May 6, 32 cases, 8 deaths; Warsaw, March 11-18, 1 death.
Straits Settlements: Singapore, April 15-29, 4 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, May 7-14, 42 cases, 18 deaths.
Ecuador: Guayaquil, May 2-9, 5 deaths.
Mexico: Tierra Blanca, May 21-27, 1 case.
Panama: Colon, Jan. 23-May 29, 15 cases; Panama, Jan. 1-May 25, 65 cases.

PLAGUE—INSULAR.

Philippine Islands: Manila, April 8-29, 1 case, 1 death.

PLAGUE—FOREIGN.

Africa: Cape Colony, April 15-22, 8 cases, 6 deaths.
Arabia: Eden, April 28-May 12, 10 cases, 10 deaths.
Australia: Brisbane, April 1-8, 1 case.
China: Hongkong, April 8-15, 1 case, 1 death.
India: General, April 18-22, 64,214 cases, 54,602 deaths; April 22-29, 67,086 cases, 56,732 deaths; Bombay, May 2-9, 702 deaths; Calcutta, April 15-May 6, 1,867 deaths; Karachi, April 30-May 7, 202 cases, 189 deaths; Madras, April 22-May 5, 2 deaths; Rangoon, April 1-8, 613 cases, 539 deaths.
Japan: Tokyo, May 10, 1 case.
Peru: Chiclayo, April 16-30, 4 cases, 8 deaths; Eten, April 16-23, 2 cases, 1 death; Lima, April 16-30, 6 cases, 2 deaths; Mollando, April 16-23, 13 cases, 3 deaths.

Medical Organization

ORGANIZATION WORK AND PROFESSIONAL CONDITIONS IN PENNSYLVANIA.

J. N. McCORMACK, M.D.

Chairman of the Committee on Organization of the American Medical Association.

BOWLING GREEN, KY.

I have been almost constantly engaged for five years in organization work in states and sections where the medical profession was just beginning to awaken to the possibility and importance of such a utilization of all of the forces at its command for the protection and advancement of its own and the public interests. After this extended experience in fields where the movement was in the initial and experimental stage, I was especially anxious to visit one of the representative states which had long been operating under the county society system and to go over it in such a way as would enable me to make a careful and comparative study of the results of that system on the life and work of the individual physician, and on the profession as a whole. In return for the information thus obtained I hope that it will not be unprofitable for me to give to those older in this work the information and impressions received in my large and varied experience.

Almost an ideal opportunity for such study and comparison was afforded in an extended itinerary arranged for me, after much thought and labor, by Dr. Cyrus L. Stevens, the efficient secretary of the Medical Society of the State of Pennsylvania. The appointments began at Johnstown in the evening of May 8 last, where the practical benefits to both the profession and people which would result from real organization were discussed before and with a semi-popular audience, made up of representative laymen and physicians. Meetings followed, usually one but sometimes two daily, exclusively of medical men, at Washington, Ridgway, Beaver Falls, New Castle, Erie, Reynoldsville, Clearfield, Lock Haven, Sunbury, Middleburg, Pen Argyl, Lebanon, Gettysburg, Pottsville, Wilkesbarre, Honesdale, Scranton and closing this arduous but most pleasant and interesting labor at Philadelphia on the evening of May 26, after which similar appointments were filled in each of the counties of Delaware before leaving for the State Society in Maine.

Dr. Stevens had given full publicity to the places and dates, as well as of the scope and purposes of the meetings, and

nearly all were well attended. The appointments were so arranged as to make one or more of them easily accessible to the physicians of nearly every county, and as my opening talks were always followed by a full and frank discussion of both the conditions and needs of the profession of each locality represented, with especial reference to scientific attainments, harmony and material prosperity; and as the information thus obtained was constantly supplemented by personal investigation and inquiry before and after the meetings, I was able to get a fair insight into the actual conditions in nearly every county in Pennsylvania, and to institute comparisons in a broad and instructive way between such conditions there and similar conditions in Wisconsin, Missouri, Illinois, South Carolina, Kansas and other recently organized states which had been visited in the same way.

On the whole, this comparison was most favorable to the Pennsylvania profession, but it soon developed that this advantage was confined strictly to the counties where fairly effective local organizations had been maintained. Wherever a few devoted men had stood together year after year, if only for a little scientific work, with good fellowship inseparable from such contact, the good results were noticeable, not only in them, but, to a degree, in those who did not attend or even belong to the societies. In such counties, constituting a majority in the state, the distinct impression was made on me that the tone and attainments of the profession were higher, and that there were fewer lower grade men than in most of the other states. As if to emphasize the value of local organizations, often adjoining such counties would be found others equally wealthy and prosperous in other respects where societies existed only in name, and where the profession was as much demoralized and as low in grade as could be found in any part of the United States. The value of good work on such lines was especially marked in the newer and more sparsely settled mountain counties. Here a larger proportion of the members of the profession were young men, they were better organized as a rule, and impressed one as being more competent and progressive than those found in many old and rich counties in other sections.

In order to attain a proper understanding of these criticisms, and of others to follow, it may be well to state here that in framing the old Pennsylvania plan, it appears to have been the intention that the county societies should be exclusive in their make-up in the best sense, and should confine themselves almost entirely to scientific and to social functions. No comprehensive system for co-operation or assistance from the state society in promoting organization in laggard counties was contemplated, each county being left to work out these matters with the varying degree of success which might have been anticipated. Most of the societies met only at long intervals and little or no effort was usually made to promote or to protect the business interests of members, to influence legislation, to educate or to secure the support of the public along legitimate lines, or to take a directing part in other matters so intimately connected with the well-being of both the profession and country. Membership was discouraged in many counties by the requirement of a year's residence after graduation or removal, or other regulations equally archaic, with the result that often not more than a third or one-half of the eligible physicians were enrolled as members, and in two or three instances it was a question if the best men were not on the outside.

Under such a system it is not surprising that the medical fees were found to be lower in a majority of the counties than in any other state where this matter has been investigated. In Luzerne, Washington and some other counties the societies had taken up this phase of the work systematically and with most satisfactory results, but, as a rule, the profession evidently participates less in the general prosperity of this rich country than any other class of citizens; and, outside of a comparatively small number of leading men, this seemed as true of the cities as of the country districts. In fact, low fees, with rate cutting and the dissensions inseparable from such conditions, were most common in the older and richer counties, unless their organizations were strong. In like manner, and for the same reason evidently, the profession has little influence in securing necessary medical and sanitary legislation. These things here have been considered as beyond the province, or rather as beneath the dignity, of medical men and societies, with results almost disastrous to both the profession and people. Drs. Beates and Stevens, who have both done noble and self-sacrificing labor in these and other fields for years, informed me that even in an emergency it was impossible to secure the co-operation of any considerable number of the physicians in most of the counties. This impressed me with the importance of insisting that county societies everywhere should be kept constantly alive to every interest of the profession, material as well as scientific, public as well as personal.

The need for reform in both business and legislative affairs is certainly urgent in Pennsylvania, and well-devised and comprehensive plans for both should probably originate in the State Society, taking one of the best county societies as a model. Dr. Beates or some other well-equipped and tactful leader, who has the confidence of the profession, should be employed, on an adequate salary, to devote his entire time to organization and legislative work, and should visit, know and be in constant touch with the medical men in each county; and he should know legislators and their affiliations in such a way as to be able to concentrate the influence of their medical constituents on them at any time in support of every proper measure. The sooner the profession can be made to understand that its legislative work is a specialty, requiring the same study and skill as any other specialty, the sooner it will begin to get proper and tangible results. No one is fitted for such work who does not possess great tact in dealing with men, an unfailing good temper, and the truest and highest spirit of altruism.

It was a constant complaint here that young men take little interest in society work, and even when there is no rule to the contrary, it is almost impossible to induce recent graduates to accept membership. This has been found to be the case all over the country, so much so as to raise the question, if the apathy and indifference of the medical schools on the subject do not constitute the most serious obstacles to the complete organization of the profession of this country. The time has come in our history when it is just as essential that the medical graduate shall know how to legitimately obtain practice, how to make a living, how to live at ethical peace with his neighbor, and how and why he owes it as a personal and public duty to co-operate with the organized body of his guild in advancing his own and their common interests, as that he should have careful training in the technical branches. Such a practical course is now given in the University of Michigan, and in a few of the best homeopathic schools, but with these exceptions, after years of agitation of the subject, even our best schools are still asleep in this regard, and almost 5,000 graduates are sent out from them annually, without economic or ethical chart or compass, to make port or shipwreck, as personal character, chance, or accident, may determine. A large per cent. of the profession of this country is in poverty, and the whole of it almost in disgrace in the public estimation, for the lack of such training, and the time is ripe for such united effort to be made as will, at least for the future generations, correct this evil at its source.

For the reasons indicated, it would be easier, to my mind, to secure practically complete and universal organization in Pennsylvania than in any other of the great states. To begin with, it has a great profession, with strong leaders who have its confidence, and the nucleus for an effective society in a majority of the counties, so distributed geographically, that such counties, under a proper system, might easily be made centers for organization in a district. With such a foundation to start with, and under such an organization force as is provided in the councilor system of the Association plan, which is now under advisement in the State Society, and with the county societies converted so far as practicable into combined postgraduate schools, and practical business and social clubs, for the study, protection and advancement of the best interests of every physician and citizen of the jurisdictions, it ought not to be a difficult matter to bring into membership all of the 3,500 medical men now on the outside, and to enlist the support of all of the best elements of the press and the public. It is true that the problems of Philadelphia, and probably of Pittsburg, are complex, but they are certainly not more so than than those which are being worked out in Chicago, Detroit, Cleveland and other large cities, and if Drs. Eaton, Perkins, Hirsch and Anders can have the earnest, active co-operation of the leading teachers and practitioners of Philadelphia, to which they are entitled, and especially if the meetings could be held on a regular evening in each week, and made so attractive as to invite and to encourage attendance from near-by counties in their own and adjoining states, this one society could easily be made a most potent factor in professional affairs in all that section of the Union. The benefits of such a policy, broad, liberal and helpful as they would be to others, would be of incalculable value to the local profession. To do all of these things, and not a single impractical or utopian suggestion is embraced in them, would require a real, practical union of all of the forces at the com-

mand of a united profession—the medical schools, first and most important, for the reasons already stated, and then the societies, clubs and individual physicians.

To say that much time and unceasing labor would be required to perfect such an organization in Pennsylvania, and that if undertaken individual members would fail to do their duty, or would obstruct the work, is only to say that the movement is a vast one, in a sadly neglected field in some counties; that the agencies to be relied on are voluntary and finite, and that it is subject to the fortunes and vicissitudes attending all human endeavor. Realizing all these things, the contention is that the results would be well worth all the time, labor and money expended, and much more, and that the work must be undertaken in the broad, catholic, generous spirit indicated, before the profession can be redeemed from self-imposed evils, many of them hoary with age, and come to occupy that place in the public estimation, and as a directing force in public affairs, to which its real worth, learning and usefulness so justly entitle it.

The compensations of the trip, aside from its main purposes, and the pleasant acquaintances renewed or made, were numerous. At Northumberland, nestled in the beautiful valley of the Susquehanna, I stood with uncovered head by the grave of Priestly, and saw his home and the little laboratory where he worked out his discovery of oxygen. In Northampton County I saw the birthplace of Gross. I was in Easton, in the same county, where he located and practiced before he came to Kentucky and caught the inspiration from the work of Brashear, McDowell and Dudley, and from association with Drake, Cooke, Austin and Joshua Flint, the elder Yandell and other colleagues, which his genius and industry transmuted and coined into a successful career there, and which crowned him with a world-wide fame after his return to the larger field later opened up for him in the metropolis of his native state.

This account can not close without an acknowledgment of the kind and generous hospitality extended to me at every appointment. This was so cordial and constant as would make the mention of individual instances invidious, and was tendered in such a way as would make criticisms of any kind seem ungracious, but for the fact that it was invited and expected, and that it is known in advance that it will be received in the same kindly spirit in which it is written.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Portland, Ore., July 11-14, 1905.

American Pediatric Society, Lake George, N. Y., June 19-21.
Medical Society of New Jersey, West End, June 20-22.
Indian Territory Medical Association, Tulsa, June 20-22.
Michigan State Medical Society, Petoskey, June 28-30.
American Climatological Association, Detroit, Mich., June 28-29.
American Surgical Association, San Francisco, Cal., July 5-7.
South Dakota State Medical Association, Deadwood, July 5-7.
Amer. Assn. of Life Ins. Exam. Surgeons, Portland, Ore., July 10.
American Medical Editors' Assn., Portland, Oreg., July 10.
Oklahoma State Medical Association, Guthrie, July 10-11.
American Urological Association, Portland, Ore., July 12-13.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held April 25, 1905.

The President, Dr. Dudley Tait, in the Chair.

Epidermolysis Bullosa Hereditaria.

DR. HOWARD MORROW presented a boy, 10 years old, showing the above condition. Whenever he is bruised, a vesicle or bulla develops. These have been most numerous about the feet and legs, and are due to an accumulation of serum between the layers of the epidermis. The boy also has sweating palms and soles. His mother suffered from a similar condition as a child, and another brother has it.

DR. MONTGOMERY stated that it is important to differentiate this condition from pemphigus, for the former is relatively harmless. The use of belladonna in one of his cases had seemed to control the formation of vesicles.

Autopsy on Case of Leukemia Treated by the X-Ray.

DR. W. F. CHENEY made a final report on the case of leukemia previously reported (see THE JOURNAL, Nov. 14, 1904, page 1578). At that time the patient had 60,000 leucocytes. Somewhat later, even while under treatment, he began to run down, and, becoming discouraged, discontinued the treatment. In November he had lobar pneumonia, but his blood picture did not change during this time. He died on March 5, 1905. The autopsy showed the ordinary gross and microscopic changes of leukemia.

DISCUSSION.

DR. GEO. EVANS believed that the treatment had been discontinued too soon in this case, and that it could hardly be cited as one demonstrating the inefficacy of *x*-ray treatment. His own cases, previously reported, are still under treatment and are doing well.

DR. A. W. HEWLETT stated that he recently had a case of leukemia under treatment with the *x*-ray. The patient had been treated with arsenic and quinin previously without any apparent benefit. Under *x*-ray treatment, the leucocytes have fallen from about 350,000 or 400,000 to about 75,000, and the hemoglobin has risen from 48 per cent. to 74 per cent. At present, about three months after treatment, the condition seems to be almost stationary. The spleen has become much smaller, but it is still much enlarged. Treating the spleen seemed to be more effective in reducing the number of leucocytes than was treating the long bones.

DR. LEHMANN prefers to treat leukemia by small doses of the *x*-ray over a long period of time. Some cases, reported in the literature, have improved remarkably within a short time, but these seem to be the very ones that are most likely to die suddenly. High tension tubes are used.

The Effect of Atropin on a Pulsus Bigeminus.

DR. A. W. HEWLETT demonstrated some tracings taken from a patient who had a pulsus bigeminus. He was given a large dose of atropin. At first the pulse became more rapid, but the interval between the normal beat and the extra systole remained unchanged. Then the pulse became irregular and the extra systoles disappeared. Finally, the heart rate slowed down; but the extra systoles did not reappear, and the pulse has, therefore, become converted from a continual bigeminal pulse into a perfectly regular, apparently normal pulse.

Regular Meeting, held May 23, 1905.

The President, Dr. Dudley Tait, in the Chair.

Bilharzia Disease in Porto Ricans.

DR. HERBERT GUNN reported two cases. This disease is prevalent in some countries, especially Egypt and other parts of Africa. British soldiers, returning from South Africa, have probably disseminated it more or less throughout the British possessions. Hitherto only six cases have been reported in the United States. Of these, four probably were imported. The other two, supposed to have originated in this country, are not examples of bilharzia infection. Manson discovered an infection in a man who had lived in the West Indies, and he believes that this patient must have contracted the disease there. This patient had not been in Porto Rico. No other reference to the occurrence of bilharzia infection in the West Indies could be found in the literature.

Both of the patients whose histories were here reported had come from Porto Rico and had resided for a few months in the Hawaiian Islands. Yet there is no reason to believe that the disease was contracted in the latter place, and it seems much more probable that it was contracted in Porto Rico. Both patients were also infected with *Uncinaria duodenalis*, and the bilharzia eggs were found in their stools accidentally. So far as could be told, they presented no symptoms directly attributable to the latter infection. The eggs found in their stools were quite typical, being about .16 mm. long by .06 mm. wide, and with lateral spines. When bilharzia eggs appear in the urine, they differ from those that appear in the feces, in that the spine is not lateral, but terminal. The cause of this characteristic difference is not known. Possibly there are two varieties of worms. The adult worms are one to two centimeters long and are bisexual. They live in the portal vein or its branches, or more rarely in the veins of other parts of the body. Several hundred worms may be present. The life cycle of the worm outside of the human body has never been worked out, and consequently we are quite ignorant as to the manner

of infection. Many believe that it takes place through drinking water or during bathing.

As in these cases just reported, the patient frequently presents no symptoms that are referable to the infection. At other times, malaise, pains in the back, loss of weight and strength, eosinophilia, etc., are present. If the eggs appear in the urine, they may cause hematuria and the symptoms of cystitis. If they appear in the feces, the patient may suffer from dysenteric symptoms.

DISCUSSION.

DR. GEO. BLUMER suggested that the lateral spine assisted the eggs in penetrating the tissues, in that it allowed them to travel in only one direction. The cases that have been reported as originating in the United States were probably not examples of bilharzia infection.

DR. C. M. COOPER stated that bilharzia disease is very common among the Boers, and much more frequent there among the boys than among the girls. This is supposed to be due to the fact that the boys bathe in streams, etc. Hematuria is so frequent that many of the more ignorant people believe a boy is not healthy unless he passes bloody urine occasionally.

Adhesive Pericarditis.

DR. C. M. COOPER stated that too much stress must not be laid on the Broadbent sign in the diagnosis of adhesive pericarditis. He has seen this sign a number of times in patients with hypertrophied hearts, as well as in thin patients whose hearts were beating very forcibly. These observations have, in a number of cases, been confirmed at autopsy. The retraction of the intercostal spaces in these cases usually ascends during expiration and descends during inspiration, thus demonstrating that it is due, not to a direct tug of the diaphragm on the chest wall, but to a negative pressure within the chest cavity caused by the contraction of the heart. Cooper has been able, in a number of cases, to demonstrate pericardial adhesions on *x*-ray photographs.

AMERICAN THERAPEUTIC SOCIETY.

Sixth Annual Meeting, held in Philadelphia, May 4-6, 1905.

The President, DR. OLIVER T. OSBORNE, New Haven, Conn., in the Chair.

The address of welcome was delivered by Dr. H. C. Wood, Philadelphia, and the response by Dr. R. W. Wilcox, New York.

The address by the president, Dr. Osborne, was on the subject, "The Therapeutic Art." This was published in THE JOURNAL, May 13.

Officers Elected.

President, Dr. Carl Beck, New York City; vice-presidents, Drs. J. M. Hall, Denver, and Robert Reyburn, Washington, D. C.; secretary, Dr. Noble P. Barnes, Washington; recorder, Dr. William M. Sprigg, Washington; treasurer, Dr. John S. McLain, Washington; curator, Dr. George C. Ober, Washington.

The next annual meeting will be held at New York City, May 3-5, 1906.

Among the papers read were the following: "The Effects of Intravenous Injections of Ergot on the Mammalian Circulation," by Drs. Torald Sollmann, and E. D. Brown, Cleveland, Ohio; "The Proper Sphere of Bromids in Epilepsy," by Dr. Frederick Peterson, New York; "The Prevention and Treatment of Uremia in Acute Nephritis," by Dr. Howard Van Rensselaer, Albany, N. Y.; "The Management of Chronic Parenchymatous and Chronic Interstitial Nephritis," by Dr. S. Solis-Cohen, Philadelphia; "The Medical Treatment of Serous Effusions," by Dr. Thomas L. Coley, Philadelphia; "The Treatment of Chronic Nasal Catarrh with Sulphur," by Dr. Louis Kolopinski, Washington, D. C.; "The Value of Physiologic Salt Solution in Circulatory Failure," by Dr. H. C. Wood, Jr., Philadelphia; "Clinical Experiences with Certain Drugs in Heart Disease," by Dr. Thomas E. Satterthwaite, New York City; "Exhibition of Several Cases of Skin Disease," by Dr. John V. Shoemaker, Philadelphia; "The Recognition and Treatment of Cholecystitis," by Dr. Robert T. Morris, New York City; "The Treatment of Intestinal Indigestion," by Dr. George B. Fowler, New York; "The Treatment of Chronic Diarrhea," by Dr. Reynold Webb Wilcox, New York City; "Rectal Alimentation," by Dr. William H. Porter, New York City; "The Etiology and Treatment of Infantile Atrophy," by Dr. John Blake White, New York City; "Notes on the Treatment of Hay Fever and Asthma," by Dr. Charles H. Knight of New York City; "Drug Adulterations," by Dr. Harvey W. Wiley of New York City; "The Prophylaxis of Pneumonia," by Dr. James M. Anders, Philadelphia; "The Recognition and Treatment of Pancreatic Inflammations," by Dr. Carl Beck, New York; "The Management of Injuries to the Knee-Joint," by Dr. DeForest Willard, Philadelphia; "The Treatment of Neuritis," by Dr. Daniel R. Brower, Chicago; "The Value of the Correction of Errors of Refraction in Psychoses," by Dr. Edward D. Fisher, New York City; "The Management of Dysmenorrhea," by Dr. Egbert H. Grandin, New York City; "The Treatment of Incontinence of Urine in Children," by Dr. Noble P. Barnes, Washington, D. C.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirtieth Annual Meeting, held at Niagara Falls, May 25-27, 1905.

(*Continued from page 1878.*)

Arteriosclerosis of the Uterus as a Factor in Uterine Hemorrhage.

DR. PALMER FINDLEY, Chicago, gave a résumé of all cases and reported four new ones. The writer deals exclusively with the so-called essential or idiopathic hemorrhages, the cause of which is not definitely determined. He argues that arteriosclerosis of the uterus is not the prime factor in bringing about these obscure hemorrhages. In his opinion, muscular insufficiency is the underlying cause, and the sclerosed vessels are but contributing factors.

Postoperative Vomiting.

DR. EUGENE BOISE, Grand Rapids, Mich., said it is assumed as proof that there is a vomiting center from which all impulses toward vomiting are sent. These impulses may be received through various channels. The conditions that lead to postoperative vomiting are numerous. They may be grouped as (1) those conditions pertaining to the anesthetic; (2) those pertaining to the general condition and surroundings of the patient; (3) and those pertaining to the stomach. The anesthetic causes vomiting (1) by its direct irritant action on the vomiting center; (2) by causing a toxemia, and (3) by saturating the secretions of the stomach. The conditions pertaining to the stomach are chronic, such as atony, dilatation, chronic disease of the mucous membrane, etc. Acute, as saturation of the tissues and secretions of the stomach by the anesthetic. Treatment must, therefore, be preventive as well as curative, involving greater care in the preparation of the patient. Four things should be kept in mind: (1) The abnormal irritability of the vomiting center; (2) the condition of the stomach; (3) the condition of the blood, and (4) the condition of elimination.

DISCUSSION.

DR. A. LAPTHORN SMITH emphasized the necessity and importance of preliminary preparation of patients, and advocated the drinking of large quantities of hot water by patients to wash out the ether that has been swallowed during its administration.

DR. MATTHEW D. MANN said that for three years he has been using ether, preceding it by chlorid of ethyl. He has done operations, lasting forty-five minutes, with two or three ounces of ether at each operation, when preceded by chlorid of ethyl. Since following this method, vomiting has been greatly reduced, and in many instances the patients have not vomited at all.

DR. A. PALMER DUDLEY said that if operators considered the preparatory measures mentioned, there would be less reflex action on the part of the stomach after operation.

DR. ANDREW F. CURRIER thinks that the preliminary administration of chlorid of ethyl, or nitrous oxid, as has been his custom recently, is much more satisfactory than the prolonged and irritating effects which come from the first stage of anesthesia, through the administration of ether alone.

DR. C. C. FREDERICK said that for a year and a half he has commenced anesthesia with chlorid of ethyl, getting the patient under its influence rapidly, then changing to ether or chloroform. Vomiting is much less by this combination.

DR. ARTHUR W. JOHNSTONE attributes the great decrease in the amount of vomiting after operations largely to careful preliminary preparation of his patients, and of having the same man give the anesthetic.

DR. MALCOLM MCLEAN, New York, said anesthetics should be given by men who are skilled in this work. By giving a preliminary anesthetic of chlorid of ethyl or nitrous oxid, the preparation of the patient is such that when ether or chloro-

form is given, large toxic doses of it are not carried through the circulation to poison the patient in the postoperative stage.

DR. GEORGE GELLHORN, St. Louis, has employed as a preliminary the hypodermic injection of scopolamin-morphin about an hour before operation. This combination arrests secretions from the mucous membrane of the mouth and throat. He gives these in the proportions of 1/150 of a grain of scopolamin to 1/6 of a grain of morphin. The amount of ether used is materially minimized by this preliminary.

DR. REUBEN PETERSON said that for years he had used about 1/6 of a grain of morphin and 1/150 of a grain of atropin, about three-quarters of an hour before the anesthetic was given. Before he used these drugs there was excessive secretion, so that the mouth and throat of the patient had to be swabbed out, but since their use this has ceased almost entirely. He has not attributed the absence of vomiting entirely to the use of these drugs, but also to thorough preliminary preparation of the patient, and to better methods of administering chloroform or ether.

DR. EDWARD P. DAVIS said that one is obliged sometimes to operate on emergency cases. In these, postoperative vomiting may be very depressing and dangerous. What can be done to prevent it? While the patient is on the table, and before the operation is quite completed, intravenous saline transfusion or injection will prevent postoperative vomiting as well as shock.

DR. FERNAND HENROTIN said that one of the most important factors in reducing vomiting, as well as shock, and of making a patient's recovery reasonably smooth, is washing out the stomach. For a little over a year, he has been resorting to quick anesthesia with nitrous oxid preparatory to the administration of ether, using as little of the anesthetic as possible, immediately washing out the stomach thoroughly after every operation, and giving a hypodermic injection of eserin before the patient is taken off the table. The use of this combination has made an immense difference in the results of his general operative work.

DR. J. WESLEY BOVEE thinks the proper procedure is to prepare patients as well as the conditions will permit. This should be done with proper discrimination. Then comes the proper administration of the anesthetic, giving as little as possible of it, and steadily, not irregularly. After the administration of the anesthetic he has found the administration of oxygen for a short time to be most satisfactory.

The Relation of the Appendix to Pelvic Disease or to Pregnancy.

DR. REUBEN PETERSON, Ann Arbor, Mich., presented his conclusions based on the clinical and microscopic study of 85 appendices removed during the course of operations for pelvic disease (see abstract in THE JOURNAL, Sept. 10, 1904, page 756).

DR. A. LAPTHORN SMITH, Montreal, said that in many cases of supposed pelvic disease and fever after delivery the appendix is responsible for most of the trouble, although it may not always present gross lesions. Therefore, no woman should be allowed to begin or to continue a pregnancy with an appendix which is known to be chronically inflamed, and all operations for the removal of the appendages should begin by the removal of the vermiform appendix.

DISCUSSION.

DR. SETH C. GORDON said it is his invariable rule, whenever he opens the abdomen for any other purpose, to remove the appendix whether good, bad, or indifferent.

DR. FREDERICK W. SEARS said that one should not be fearful about operating on pregnant women for appendicitis, as his experience has been that they stand the operation better than the non-pregnant. He reported three cases in which he operated on pregnant women for appendicitis.

DR. ANDREW F. CURRIER does not believe that it is good surgery to remove any organ of the body which he is not convinced is diseased. In certain cases in which there is a strong probability of malignant disease, an exception should be made; but the function of the surgeon is to build up rather than to remove.

DR. CLEMENT CLEVELAND looks on the appendix as a useless organ, and when he operates for other intra-abdominal conditions he does not hesitate to remove the appendix. In cases in which the appendix has not been found diseased, but has been removed, there is no history to show that any harm has come to the patients. The effect has been *nil*.

DR. FERNAND HENROTIN said that, so far as clinical observation is concerned, the appendix is not only responsible for inflammatory attacks, but for indigestion, colic, dyspeptic symptoms, and trouble in the abdomen which is never accurately diagnosed. After an operation for its removal, the patients complain less. He removes the appendix in every instance when operating for some other purpose, unless there are contraindications to its removal.

DR. HERMAN J. BOLDT said that a woman, pregnant about the fourth month, had a number of attacks of acute pain in the abdomen. On bimanual examination, under ether, it was impossible to determine anything definite, but because of the extreme pain he opened her abdomen and found an appendix about six inches long, curled on itself, and acutely inflamed. Since its removal the woman has been well.

DR. JAMES F. BALDWIN, Columbus, Ohio, has for the last eight years made it a routine practice to examine the appendix in all cases when operating for other intra-abdominal pathologic conditions. Out of 3,000 abdominal sections, he has removed the appendix 1,800 times.

DR. E. P. DAVIS said there are special reasons why appendicitis should appear in pregnant women, and why the appendix should be removed during pregnancy. The *Bacillus coli communis* is present in abundance in the intestine of every pregnant woman, and any condition of the intestinal tract during pregnancy, which in the slightest degree lessens peristalsis of the normal intestine, predisposes to infection by that organism—infection of the adnexa, the uterus, or the appendix. On the other hand, the pregnant woman whose metabolism is well maintained is in a good condition for a surgical procedure, because she has a physiologic blood plethora. She bears anesthesia well. The removal of the appendix is applicable to pregnant women, and need not be delayed until after delivery, as it is much safer to do the operation during pregnancy than let the woman run the risk.

DR. ARTHUR W. JOHNSTONE said that his experience has been limited to four operations performed on pregnant women for appendicitis between two and a half and four months. All recovered. There were no miscarriages.

DR. MALCOLM MCLEAN would not remove an organ simply because it may in the future give trouble.

DR. ELY VAN DE WARKER sees no reason why, if one observes a perfectly healthy appendix, when operating for some other purpose, it should be removed for fear that it would give trouble in the future. One might as well remove the gall bladder and other organs for fear they might cause trouble in the future.

DR. J. RIDDLE GOFFE does not believe in removing a healthy appendix when operating for some other purpose. The appendix may have some function.

DR. P. A. HARRIS opposes the removal of perfectly healthy appendices unless there is abundant time to remove these organs or unless the patients desire it.

Radical Abdominal Versus Vaginal Operation for Uterine Carcinoma.

DR. C. C. FREDERICK, Buffalo, N. Y., drew the following conclusions: 1. The radical operation for carcinoma of the uterus should be done only when the gross lesions are confined to the uterine tissues. 2. The deeper tissues of the cervix are generally invaded first, and also the deeper layers of the vagina in the immediate vicinity of the cervix are infected before the disease appears on the mucous surface. 3. The bladder wall is very early infected, especially when the anterior lip of the cervix is the starting point of the growth. 4. When pain becomes a prominent symptom, the growth has passed beyond the uterine tissue. Such an involvement is a positive contraindication to a radical operation. 5. In carcinoma of the body of the uterus the liability of extrauterine lymphatic infection is less for the same period of growth. 6. When the

radical operation is done, it is necessary to remove as much of the vaginal wall and pericervical tissues and broad ligaments as possible. 7. It is a well attested fact that in most recurrences after hysterectomy the growth is found in the cicatrix and the adjacent vaginal tissues. 8. Removal of the pelvic lymphatics and glands does not insure against recurrence. 9. If the vagina is ordinarily capacious, and if the uterus can be drawn down, it would seem that the vaginal route is naturally the one by which the operation can be most readily and thoroughly done. 10. Recurrence due to infection of the freshly incised tissues at the time of operation by contact of the carcinomatous mass or its fluids may, to a degree, be prevented by the vaginal removal of the cancerous mass, or by thoroughly cauterizing it before beginning the operation proper. 11. The operation can be more quickly done than by the abdominal route. 12. Convalescence after vaginal operations is much more rapid, there is much less pain, and there is much less shock to the nervous system. 13. For the cervical carcinoma, in most instances the combined clamp and cautery operation seems to be the preferable one. 14. Infected areas are reached and rendered harmless by the free use of the cautery in this operation. 15. All tissues should be seared by it, except those at the utero-vesical junction. The writer limits the abdominal operation to those patients in whom the condition of the vagina or immobility of the uterus makes the vaginal operation practically impossible.

Paravaginal or Abdominal Operation in Uterine Carcinoma.

DR. GEORGE GELLHORN, St. Louis, presented the following conclusions: 1. The radical abdominal operation, so far as the routine ablation of the lymphatic organs of the pelvis is concerned, has thus far failed to yield the desired results. On the other hand, the eradication of the parametria has been found to reduce greatly the percentage of cures. 2. The simple abdominal and vaginal operations which do not include this procedure should be discarded. 3. For the extirpation of the parametria, Wertheim's method is the best of the abdominal operations. It has, however, certain disadvantages as compared with the paravaginal method of Schuchardt. 4. Considering the encouraging results of igni-extirpation, a combination of thermocautery with paravaginal extirpation, gives promise of further improvement in operative results.

Incontinence of Urine in Women.

The president's address by Dr. E. C. Dudley, Chicago, was published in full, with illustrations, in THE JOURNAL, June 3, 1905, page 1738.

Mortality in Operations for Uterine Fibroid.

DR. J. MONTGOMERY BALDY, Philadelphia, said that degenerations of fibroid uterus, except malignant and necrotic, are of more scientific interest than practical value. The greatest dangers of fibroids lie in the large death rate following operations due to heart degeneration, arterial changes, lung thrombosis, etc. He pointed out the condition inherent in all fibroid tumors of the uterus, and said the tumor should be removed at a period early enough to anticipate the changes.

Migratory Uterine Fibroids.

DR. REUBEN PETERSON, Ann Arbor, Mich., reported cases showing the different stages of the separation of uterine growths from the uterus and their attachments to other abdominal organs. The causes and results of such migration were studied in the light of the literature of the subject and the personal experience of the author. Case 1 was an irregularly-shaped subperitoneal fibroid the size of a fist, attached to the uterus by a very slender pedicle. The latter was very friable and broke away from the uterus during the removal of the latter. The omentum was attached to the posterior surface of the fibroid and partially nourished it. Case 2 was one of subperitoneal uterine fibroid, the size and shape of a normal kidney, connected with the uterus by a narrow pedicle, twisted once on itself. The tumor was situated on the right uterine horn, although the pedicle came from the other horn. The tumor was also attached to the bladder, pelvic peritoneum, omentum and appendix. Case 3 was a hard, smooth tumor the size of an orange, unattached to the uterus, having all the characteristics of a subperitoneal fibroid, surrounded on all sides by the omentum and nourished entirely by the omental blood vessels.

Surgical Treatment of Gastric Ulcer.

DR. WILLIAM H. WATHEN, Louisville, contributed a paper on this subject, which will be published in THE JOURNAL.

SYMPOSIUM ON THE TOXEMIAS OF PREGNANCY.

Clinical Types of Pregnancy Toxemia.

DR. J. CLIFTON EDGAR, New York, considered the benign type, subacute type, acute type, fulminant type, toxemic coma without convulsions, acid toxemia simulating hepatic pregnancy toxemia, persistent hyperemesis without clinical symptoms of toxemia, etc. Cases illustrating each type of toxemia were reported.

Renal Insufficiency.

DR. HENRY C. COE, New York, said that this referred not only to diminished amount of urine, but to deficient excretion of urea, with or without accompanying albumin and casts. The importance of this subject can not be overestimated on account of its direct bearing on the prevention of eclampsia. He mentioned the erroneous views formerly held that eclampsia always comes suddenly, without warning. Now it is known that danger signals are seldom absent long before the attack, if careful watch is kept over the urine. Diminished urea, not the presence of albumin, is the important point. There are two channels for the excretion of toxins, the kidneys and intestines. The kidneys and bowels should be flushed and the diet regulated all through pregnancy. One should know the daily amount of urine at frequent intervals and the amount of urea. He should not wait for general evidences of toxemia, gastric disturbances, pruritus, headache, etc., but anticipate them. Illustrative cases were cited.

Pernicious Vomiting of Pregnancy.

DR. J. WHITRIDGE WILLIAMS, Baltimore, after pointing out the distinction between vomiting of and vomiting in pregnancy, divided the former into three groups, and discussed their nature, etiology and treatment, namely, reflex, neurotic, and toxemic. The reflex vomiting of pregnancy may be due to the presence of abnormalities of the generative tract or ovum, which exist prior to the onset of pregnancy, or are coincident with it. Among such conditions may be mentioned retrodisplacements of the uterus, ovarian tumors, certain forms of endometritis, and abnormalities of the ovum, such as hydatidiform mole, hydramnios, and certain cases of twin pregnancy. The observations of the author and others show that typical lesions may be found at autopsy in certain cases, and these consist in the necrosis of the central portions of the liver lobules, and fatty degeneration and necrosis of the secretory cells of the kidney. Such changes can be produced only by the circulation in the blood of some toxic substance which acts destructively on the cells in question. The occasional occurrence of jaundice in some cases adds confirmation to the existence of an hepatic lesion; while the not infrequent association of peripheral neuritis with the vomiting accentuates the probability of its toxemic origin. The liver lesions are identical with those observed in acute yellow atrophy of the liver and icterus gravis, though in most of the cases of vomiting no marked diminution in the size of the liver has been noted. As the former affections occur usually in the second half of pregnancy, and the vomiting in the first half, it seems probable that the effect of the toxemia varies somewhat with the duration of the pregnancy. At present, we are unacquainted with the exact nature of the toxic substances, though they are supposed to be metabolic in origin, but whether derived from the mother or fetus, or both, is not known. All that is definitely settled at present is that we have to deal with a toxemia which gives rise to serious lesions in the liver, and later in the kidneys. That the latter are secondary in character is indicated by the fact that the urine does not contain albumin or casts until shortly before death. Associated with these lesions is a striking change in metabolism, manifested by a marked increase in the percentage of the total nitrogen of the urine, put out as ammonia, which, instead of being 2 to 5 per cent., as normal, may rise to 16.

32, or even 46 per cent. Whether the increased ammonia output is due to the fact that the liver lesions interfere with the normal oxidation of nitrogenous material, so that large amounts escape conversion into urea, and are therefore excreted in a less highly oxidized form, as ammonia, or whether it represents an attempt to neutralize an acid intoxication, is as yet undetermined. The practical point established is that a marked increase in the percentage of the urinary nitrogen excreted as ammonia indicates the existence of a serious toxemia, which, if allowed to continue, will bring about lesions in the liver and other organs inconsistent with life, and, accordingly, abortion should be induced as the only hope of saving the patient. It is probable that an ammonia output of ten per cent. represents the danger signal, and as soon as it is reached, immediate interference is demanded.

In the reflex and neurotic forms of vomiting, the ammonia output remains normal, and, accordingly, in such cases the treatment should consist in correcting genital lesions, if present, and the employment of mental suggestion and rest cure. There are at least two forms of toxemia of pregnancy, one giving rise to pernicious vomiting, and acute yellow atrophy, and the other to eclampsia.

Eclampsia and Its Treatment.

DR. CYRUS A. KIRKLEY, Toledo, Ohio, said that other toxins than urea may produce eclampsia. Mixed infection is most probable. Renal insufficiency rather than albuminuria is an etiologic factor. Although the source of the toxins is unknown, recent research rather points to functional disease of the liver. Prophylactic treatment, as a rule, is successful, and this consists of means to promote elimination through the great emunctories. Venesection in suitable cases, both as a prophylactic and curative measure, stands first in the list of remedies.

DR. FRANKLIN S. NEWELL, Boston, in a paper on the same subject, said that the treatment, to be efficient, should have four distinct objects in view: (1) the prevention of further absorption of toxins by the removal of the cause; (2) limitation of damage by the toxins already in the system; (3) elimination of the toxins, and (4) treatment of the patient. For some days after the acute process has subsided, the patient should be kept on a liquid diet. Absolute quiet and freedom from care are imperative, and free excretion should be maintained. Sedatives and stimulants should be used as indicated.

Vaginal Cesarean Section, Indications, Advantages and Technic.

DR. HENRY D. FRY, Washington, D. C., said the indications for the employment of this operation are, necessity for emptying the uterus in cases of grave eclampsia, cancer of the uterus, rigidity of the os, threatened rupture of the uterus, prolapse of the funis, placenta prævia, heart disease in the pregnant woman, and hemorrhage from the normally implanted placenta. Fry entertains grave doubts regarding the application of this operation or any other method of rapid dilatation to the treatment of placenta prævia. The reduced maternal mortality from this serious complication is largely due to recognizing the value of slow dilatation. He sums up the various indications for this new operation. The advantages of vaginal Cesarean section are the rapidity with which the uterus can be emptied. From six to ten minutes is all the time that operators have reported necessary, and as they become more familiar with the technic, it may be further reduced. Few operators have done more than one or two operations. Twenty to thirty minutes should complete the sewing up of the wound. There is little traumatism, and a clean surgical cut to sew up instead of leaving a lacerated surface. In eclampsia, the blood resulting from the operation is beneficial, and the patient is returned to bed in the best condition to overcome toxemia.

Mortality of Operations, Other Than Strumectomy, in Exophthalmic Goiter.

DR. BARTON C. HIRST, Philadelphia, said that to learn the collective experience of American surgeons with exophthalmic goiter complicating operations, 366 letters were despatched to the members of the national societies of surgery and gynecology. Forty-three surgeons reported 69 cases. This number added to the six collected and reported by Sanderson, makes a total of 75. Of this number, 13 died. In all of these fatal cases the cause of death is expressly stated to be acute thyroidism, with tachycardia to an extreme degree, and eventual heart failure. In one case of appendiceal abscess, the patient died of the combined effects of sepsis and thyroidism. In another case of pelvic abscess, the patient died under chloroform before the operation was begun. Excluding these two cases, the mortality from thyroidism was 14.6 per cent., or including them, 17.3 per cent. The character of the operation seems to have made little difference in the results. The mortality of the minor operations was 16 per cent.; that of the hysterectomies and myomectomies, 13.3 per cent. It appears, therefore, that the existence of exophthalmic goiter adds about 15 per cent. to the mortality of any operation performed on the patient. In the first of the author's patients there has been a distinct goiter and exophthalmos for years, but the tachycardia was moderate. The symptoms in this case were never very alarming, and soon yielded to treatment. It was not known that the second patient had Graves' disease until two days after the operation, when the pulse rose to 180; the eyes protruded, and the throat swelled. He then learned that since girlhood the woman had been subject to such attacks, but lately has been free from them. Although some improvement was shown after hypodermoclysis, purgation and heart stimulants, on the first day that symptoms appeared, a rapid and complete recovery was secured in the next three or four days, apparently in consequence of the administration of suprarenal extract in three grain doses every four hours.

Sudden Death During or Immediately After the Termination of Pregnancy or Operation on Pelvic Organs.

DR. EDWARD P. DAVIS, Philadelphia, reported three instructive cases, and presented a table of 25 typical cases, selected from 193 papers on the subject consulted, and drew the following conclusions:

1. Sudden death may occur after abortion, labor or operation, from undemonstrable causes.

2. Death may follow abortion, labor or operation from the rapid formation of a pulmonary embolus. Examination of cases shows that this happens after so many different procedures that it is impossible to designate any one operation or manipulation which produces it. Pulmonary embolism may develop before the placenta has been delivered, or when delivered by Credé's method; although it is impossible to select any one manipulation which produces this accident. It is not frequent after Cesarean section, nor after the more complicated obstetric operations. Predisposing and probably exciting causes are bronchial infection and abnormal conditions of the blood. In 18,800 women in childbirth or having operation, 30 cases of immediate pulmonary embolism occurred, with a mortality of 73 1-3 per cent. Diagnosis: Respiratory spasm, with continued heart action. Treatment: Hypodermatic stimulation and electric current; intravenous saline transfusion has not proved efficient.

3. Primary thrombosis and secondary embolism may cause death after the termination of pregnancy or operation. Causes: Pre-existing infection, mechanical violence, altered conditions of blood serum, and lesions in the walls of the vessels. The most important symptom is Mehler's sign—rapid pulse. The temperature curve in these patients falls on the third or fourth day, while the pulse curve rises. Death usually occurs from secondary formation of pulmonary embolus. Treatment consists in absolute rest, bandaging of extremities, and in some cases abdominal section with ligation and excision of the veins of the broad ligament. Pulmonary complications develop in 25 per cent. of the cases. Thrombosis is most common in vessels connected with the left iliac vein. There is no conclusive evidence that the entrance of air into the veins is a sufficient cause for death. Gas may form in the vessels from infection.

4. Sudden death occurs in parturient women, and after operation, from reflex nervous shock, without assignable cause; also from disease of the thoracic viscera, from infec-

tion of the placental site, and other obscure conditions. Patients having fibroid tumors are especially liable to disease of the heart and vessels.

Present Therapeutic Status of Electricity in Gynecology.

DR. CHAUNCEY D. PALMER, Cincinnati, spoke of the importance of this agent in a certain class of cases, and referred to its evolution. He said the possibilities of electricity as a therapeutic agent are by no means limited, and the object of his paper is an effort to speak of electricity and place it on its proper basis, not to magnify or misrepresent its virtues, nor to depreciate its powers.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Some Uses of Ammonium Chlorid.

In the treatment of neuralgia of the fifth nerve, Shoemaker recommends the following combination containing ammonium chlorid:

℞.	Ammon. chloridi	gr. xxx	2
	Tinct. gelsemii	m. viiss	50
	Tinct. aconiti	m. i	06
	Ext. glycyrrhizæ flu	ʒi	4
	Aquæ q. s. ad	℥i	30

M. Sig.: To be taken at one dose, and repeated every hour, when the pain comes on, until three doses are taken.

In the first stage of bronchitis, when there is a deficient secretion, he recommends it combined as follows:

℞.	Ammon. chloridi	ʒii	8
	Potass. iodidi	gr. xv	1
	Tinct. ipecacuanhæ	m. xxx	2
	Mist. glycyrrhizæ co. q. s. ad	℥iv	120

M. Sig.: One tablespoonful every four hours.

Ammonium chlorid is also recommended by some authorities as a hepatic stimulant as follows:

℞.	Ammon. chloridi	ʒiii	12
	Sodii chloridi	ʒi	4
	Ext. taraxaci flu	℥ii	60
	Decoct. aloes co. q. s. ad	℥viii	240

M. Sig.: From one dessertspoonful to a tablespoonful in water three or four times a day.

According to Ringer, ammonium chlorid increases the flow of bile and, therefore, is of service in torpor of the liver, sick headache, biliousness and jaundice due to obstruction of gall ducts. In laryngitis and in chronic bronchitis, when the secretion is tough, it may be used in an inhaler, or internally as follows:

℞.	Ammon. chloridi	gr. v	30
	Vini ipecacuanhæ	m. v	30
	Syr. tolutani	ʒss	2
	Mist. ammoniaci (B. P.)	ʒii	8
	Aq. anisi q. s. ad	℥i	30

M. Sig.: At one dose and repeated three times a day.

[Mistura ammoniaci is composed of: Ammoniac, 5 parts; syrup of tolu, 10; aqua destil., 150.]

In the treatment of the different forms of neuralgia, Beasley recommends the following combinations containing ammonium chlorid:

℞.	Ammonii chloridi	gr. x	65
	Tinct. gelsemii	m. x	65
	Tinct. aconiti	m. ii	12
	Ext. kolæ liq.		
	Ext. glycyrrhizæ, flu. āā	ʒss	2
	Aq. chloroformi q. s. ad	℥i	30

M. Sig.: At one dose and repeat every four hours. Or:

℞.	Ammonii chloridi	gr. xv	1
	Tinct. ammon. valer	m. xv	1
	Tinct. belladonnæ	m. x	65
	Tinct. ignatiæ	m. v	30
	Syr. arom.	ʒi	4
	Aquæ destil. q. s. ad	℥i	30

M. Sig.: One to two tablespoonsful to be taken in water every four hours for three doses.

In cirrhosis of the liver he recommends the following combination:

℞.	Ammonii chloridi	gr. xii	75
	Ext. taraxici liq	ʒi	4
	Tinct. gent. co.		
	Syr. aurantii, āā	ʒss	2
	Infus. sennæ co. q. s. ad	℥i	30

M. Sig.: To be taken at one dose in water and repeated once daily.

When there is congestion of the respiratory mucous membranes or of the pleura the following is advised:

℞.	Ammonii chloridi	gr. x	65
	Vini antimonialis	m. vi	40
	Ext. glycyrrhizæ liq	ʒss	2
	Aq. anisi q. s. ad	℥ss	15

M. Sig.: At one dose in water and repeated every four hours.

In cases of orchitis the following is recommended:

℞.	Ammonii chloridi	ʒi	4
	Spts. rectif.	℥i	30
	Aquæ destil. q. s. ad	℥vi	180

M. Fiat lotio. Sig.: Lint to be saturated with this solution and applied to the painful parts.

Sponging of Fever Patients.

The following method of procedure in sponging a patient is recommended by the *Hospital*: Before commencing the sponge the temperature of the patient must be taken. For tepid sponging, water should be prepared at a temperature of from 80 to 90 degrees F. Remove all the clothing from the patient and place him between blankets. All basins, sponges and towels must be arranged beside the bed, as the patient should never be left during the course of sponging. Commence at the head and proceed downward, exposing only one limb at a time. When the entire body has been gone over the patient should be wrapped in a warm blanket and left undisturbed for an hour. The temperature should then be taken in order to ascertain whether or not any reduction has taken place. The same routine should be carried out in cold sponging as in tepid sponging. It is better, so it is stated, to sponge the limb over first in tepid water before applying the cold, as it will then cause less shock to the patient. A hot-water bottle should be kept in touch with the patient's feet during the sponge, in order to prevent a chill or collapse. When the temperature has been reduced, the body should be dried and a flannel gown put on. Ammonia, cologne water or vinegar added to the water makes it more cooling by its rapid evaporation.

Hyperidrosis.

The following combinations after Unna are recommended in the treatment of hyperidrosis: Wash the affected parts with spirits of camphor and apply the following:

℞.	Ichthyol.		
	Spts. terebinthinæ, āā	ʒii	8
	Ung. zinci oxidi	ʒiv	15

M. Fiat unguentum. Sig.: Apply locally.

In the shoes the following may be sprinkled:

℞.	Sinapis	ʒi	4
	Pulv. talci	℥iv	120

M. Sig.: To be dusted in the shoes and hose.

The Itching of Psoriasis.

The following combination is recommended by *Med. Rev. of Reviews* in the treatment of the itching which may occur in psoriasis:

℞.	Chloralis hydratis	ʒss	2
	Pulv. camphoræ	gr. xx	1 30
	Acidi carbol	m. xlv	3
	Sulphuris sublim	ʒi	4
	Ung. aq. rosæ	℥i	30

M. Fiat unguentum. Sig.: Apply locally two or three times daily to the affected areas.

Gout.

The following combinations are recommended by *Le Prog. Med.* in the treatment of gout:

℞ Lithii iodidi.....gr. iv | .25
Ext. gentianæ |
Pulv. gentianæ, āā.....gr. i | .06

M. Fiat cap. No. i. Sig.: One such capsule three or four times a day.

Acne.

In the treatment of acne occurring in young individuals, Shoemaker recommends the following outline of treatment:

℞ Ferri pyrophos.....gr. ℥i | .06
Calcii sulphidi.....gr. ss | .03
Strych. sulphatis.....gr. 1/80 | .008
Quin. sulph.....gr. i | .06

M. Fiat cap. No. i. Sig.: One such capsule three times daily.

Locally the following should be applied:

℞ Ung. hydrarg. nitratis.....℥i 4 |
Lanolini.....℥ss 15 |
Camphoræ.....gr. xx 1 | .30
Beta-naphthol.....gr. xv 1 |
Ung. zinci oxidi benzoatis.....℥ss 15 |

M. Fiat unguentum. Sig.: Apply locally night and morning.

Scabies.

The following outline of treatment has been recommended by M. Hodara in the treatment of scabies:

℞ Olei olivæ |
Adipis, āā.....℥v 20 |
Sulphuris |
Beta-naphthol, āā.....℥i 4 |
Balsami peruv.....℥ss 2 |
Cretæ prep.....℥i 4 |

M. Fiat unguentum. Sig.: To be thoroughly applied over the affected areas at night.

In the treatment of young children the foregoing may be diluted by adding an equal quantity of olive oil. When impetigo or severe eczematous conditions accompany the scabies the following is recommended:

℞ Liq. petrolati |
Glycerini, āā.....℥ii 8 |
Lanolini.....℥vii 28 |
Sulphuris.....℥ii 8 |
Zinci oxidi.....℥v 20 |
Menthol.....gr. ii 12 |

M. Fiat unguentum. Sig.: Apply locally to the affected areas.

Pertussis.

H. J. Ring, in *Calif. State Med. Jour.*, states that the fluid extract of castanea has formed the basis of his treatment of pertussis for several years past. He has found that it acts more promptly if combined with belladonna and hyoscyamus. When there are indications of brain complications he combines it with small doses of fluid extract of ergot. One advantage of this preparation is that when combined with simple syrup all children take it readily, as it is not unpleasant, and it is a harmless remedy when given in medicinal doses however long it may be continued. It may be given in from 15 to 20 minim doses (1.-1.30) at any age over 2 years, and repeated every two hours. The following combination is recommended by him:

℞ Ext. castaneæ flu (chestnut).....℥i 30 |
Ext. belladonnæ flu.....gtt. iv | .25
Ext. hyoscyami flu. (according to age)..... |
.....m. x-℥i | .65-4.
Syr. simplicis q. s. ad.....℥iv 120 |

M. Sig.: One teaspoonful every two hours.

Any local application desired may be used in connection with this treatment, but care must be observed in obtaining a reliable preparation of castanea.

The preparation made from the fresh root of *Cochlearia armoracia* (horse-radish root) is recommended by French authorities as of value in the treatment of whooping cough. It may be combined with an infusion of coffee as follows:

℞ Spts. armoraciæ co. (B. P.).....℥ii 8 |
Infusi coffeæ q. s. ad.....℥iv 120 |

M. Sig.: One tablespoonful every four hours.

Four or five drops of the wine of ipecac may be added to the foregoing combination if desirable.

Medicolegal

Not Liable for Insanitary Prison.—A municipal corporation, the Supreme Court of Appeals of West Virginia holds, in the case of Shaw vs. City of Charleston, is not liable for injuries to a person occasioned by the insanitary condition of its prison while he is confined therein for violation of a city ordinance. The explanation given is that the maintenance of a prison is the exercise of a purely governmental power, and that therefore a municipal corporation is not liable for injuries caused by negligence or omission of duty on the part of its officers and agents respecting its prison or persons confined therein.

Relation of Second Miscarriage to Accident.—The Supreme Court of Texas says that in Rapid Transit Railway Co. vs. Smith, an action brought by the latter to recover damages for personal injuries to his wife, there was testimony to show that the wife shortly after the accident had a miscarriage, and later another. The jury were instructed that, if they found that the second miscarriage was the result of the original injury, they should consider it in assessing the damages, otherwise not. The Supreme Court thinks it would have been better to have instructed the jury as to the purpose for which it was to be considered, namely, in determining the extent of such injury, and not for the purpose of allowing specific damages for that miscarriage itself.

May Charge for Liquors Properly Administered.—The Kansas statute provides that a physician lawfully and regularly engaged in the practice of his profession, if he shall deem it necessary to the health of a patient, may administer intoxicating liquors to the patient. It follows, therefore, the Supreme Court of Kansas holds, in the case of State vs. Wilson, that in the absence of any statutory inhibition he may charge and receive pay therefor. The following definition was given: "The legal definition of the word 'administer' is to give, supply, or dispense." It was contended that the word "furnish" should have been added. But the court holds that it was not necessary to use all the synonyms of the word in order to convey to the jury a correct definition of it.

Can Not Compel Re-exhibition of Person.—The Court of Civil Appeals of Texas holds, Houston & Texas Central Railroad Co. vs. Anglin, an action brought to recover damages for personal injuries to the minor son of the latter party, that there was no errror in the refusal of the trial court to require the boy to exhibit his chest to a physician, so as to permit the latter to examine the same, although it appeared that the physician had previously examined him, and that, while testifying in his own behalf, the boy had removed part of his clothing and exhibited to the jury a depression in the lower part of his chest, claimed to have been caused by a crushing of the same at the time of the alleged accident. The Court of Civil Appeals says that, whatever may be the rule in other jurisdictions, it regards it as well settled in that state that a court has no authority to compel a party to exhibit his person to a physician, or any other person, for the purpose of examination; and the fact that he has done so once does not deprive him of the right to refuse to do so again.

Powers of Superintendent of Health.—The Supreme Court of North Carolina says, in the case of Copple vs. Commissioners of Davie County, that it is of the opinion that the county superintendent of health has no right to delegate the performance of his official duties to others—certainly not so as to give his employes the right to make their services a county charge. The office of superintendent of health is one of trust and responsibility. Such superintendent is paid a salary pursuant to the statute at that time fixed by the board of commissioners, and they have the right to expect and require that he will perform the duties for which he is paid. In this case an insolvent person had the smallpox. To prevent the spread of the disease, in the judgment of the superintendent of health, the officer who was given control of the matter, it was necessary to remove and isolate the patient. This was done by removing him to a pesthouse belonging to certain mills. The plaintiff, a physician, took the patient to the pesthouse, took his meals to him three times a day, and attended to him

continually during his sickness, when no one else could be found to do it, at the request and by the direction of the superintendent of health. This, the court says, was no delegation of that officer's duties. The superintendent did attend the patient. He was performing the duties imposed on him by statute, and this was a case where the employment of help was necessarily contemplated and authorized. It could not be suggested for a moment that the power of the superintendent was exhausted when he had the patient removed, and that the statute contemplated that he was to be left without food or attendance. There was no abdication of his office by the superintendent. On the contrary, in providing for the care and attendance that officer was carrying out his duty as prompted by every instinct of humanity, and sanctioned by the express provision of a wise and merciful law. If the county pesthouse had been properly equipped and ready, and nurses and sustenance provided, the county commissioners might have reasonably required that patients of this character should be removed into the public pesthouse, provided the quarantine could be made effective that way. The county pesthouse was not ready, and the court holds that, under the statute, and on the facts of the case, the superintendent of health had the power to direct this removal and provide for the maintenance of the patient, to the amount of its reasonable worth.

When May Court Compel Examination Board to Issue License.—The Supreme Court of Washington says, in State vs. Board of Dental Examiners of the State of Washington, that it seems to it that the confusion that arises in the discussion of the question of the right of the courts to interfere with the discretion of an examining board arises more from the inaccurate terms which are used by the law writers than from any inherent difficulty in the law itself. The general rule is well established that the courts can not review the discretion which has by law been vested exclusively in inferior tribunals, and mandamus will therefore not lie to compel the performance of acts or duties which necessarily call for the exercise of discretion on the part of the officer or board at whose hands their performance is required, because the state has, as in this instance, specified the officers on whose judgment on the questions submitted to them the state is willing to rely. Taking the case at bar (where a mandamus was sought) for an example, if a record of the examination had been produced in court, with the questions, answers, and credits given to each question, who would determine whether or not a particular answer had received a sufficient credit? Certainly not the jury, for they are not presumably competent to pass a proper judgment on such subjects. Not the judge, for his qualifications do not embrace, or at least require, an expert knowledge of the science of dentistry. Expert witnesses could not be properly permitted to testify for the reason that the state has already designated and empowered experts to pass on these questions, presumably by reason of their recognized qualifications. But, notwithstanding this, it is equally well established that courts will compel by mandamus the honest performance of official duty, and if, under pretense of exercising discretion, the power is exercised with manifest injustice, or is grossly abused, or duty is avoided, the courts will grant relief. The action of the court must in reality be based on the assumption that the inferior tribunal has refused to exercise the discretion with which it is clothed, because, if it acts arbitrarily or fraudulently, or through unworthy or selfish motives, or conspires against the rights of individuals, under the law, and therefore against the law itself, it has not strictly, as is frequently said, "abused its discretion"—a term which is responsible for some confusion of ideas on this subject—but, in contemplation of law it has not exercised its discretion at all, but has sought to substitute arbitrary and fraudulent disposition and determination of the question submitted for the honest discretion demanded by the law. In such cases the law will by mandamus compel the tribunal to act honestly and fairly, or, in other words, to exercise its discretion; and, when this distinction is kept in mind, the seeming difficulties which have surrounded this question, and which have caused so much discussion, disappear.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 3.

1 *Inflammatory Diseases of the Uterine Adnexa and Its Treatment. H. Grad, New York.
2 *Ophthalmic Suggestions. R. Kalish, New York.
3 *Heart and Circulation in the Prognosis and Management of Pulmonary Tuberculosis. S. von Ruck, Asheville, N. C.
4 *Relation of Ethmoidal Inflammation to Asthma. H. Coggeshall, New York.
5 *Difficult Diagnosis in a Case of Abdominal Pregnancy. W. S. Langfitt, Pittsburg, Pa.
6 Case of Heroin Habit. C. E. Atwood, New York.
7 Cactus Grandiflorus. F. Ellingwood, Chicago.

1. **Inflammatory Disease of the Uterine Adnexa.**—Grad considers the anatomy of the adnexa, the etiology of inflammatory processes in this region, their pathology and their relation to pelvic abscess and peritonitis, the clinical history of acute and chronic salpingitis and of ectopic pregnancy. The author believes that the use of palliative methods is very important, as the natural termination of these lesions is in resolution and cure. Procrastination in operative measures and judicious persistence in general treatment is to be strongly urged. The use of opiates requires especial care in order not to mask the symptoms and yet not to permit the patient to suffer needlessly. Local treatment may or may not be necessary, and antiseptic applications and irrigations with liberation of pus and absolute cleanliness are the essentials in the treatment of the various lesions of the urethra, vulva, vagina and cervix. Grad calls attention to the danger attempting radical operation during the acute exacerbations, which he terms a questionable procedure. Vaginal drainage will usually bring about a cessation of symptoms with improvement in the patient's condition. The technic of pelvic operations is treated at length, special stress being laid on the matter of conservative measures and their advisability, when possible. Vaginal section by a T-shaped incision is commended for use in suitable cases.

2. **Some Ophthalmic Suggestions.**—In regard to diseases of the eye, Kalish points out some popular fallacies which, he says, are often the cause of serious injury to the visual power. Among these is the senseless outcry against the wearing of glasses by the young, the belief that squint in young children should go untreated, as they will outgrow it, and especially what the author terms the self-fitting of glasses in the establishments of opticians. The victims in these places are allowed themselves to select the glasses that seem to "fit," and 20 per cent. of such eyes are accurately corrected as to the refractive error, and sooner or later it is discovered that serious damage has been done. Much emphasis is laid by the author on the broad rule that glasses should never be ordered without an ophthalmoscopic examination. Instances are cited in which the glasses obtained from opticians were wholly unsuitable and did positive harm.

3. **Heart and Circulation in Prognosis and Management of Pulmonary Tuberculosis.**—von Ruck says that the relation of the heart and circulation to the course of chronic pulmonary tuberculosis is a factor both in the prognosis and management of such cases which is not generally accorded the attention and study which its importance demands. He suggests the analogy between the relation of the heart and circulation to the local disease in acute pneumonia and in chronic pulmonary tuberculosis. According to his conception, this relation differs chiefly in that the pulmonary obstruction develops rapidly in the one and more slowly in the other. By reason of this difference, more can be done to conserve or to increase the power of the heart in phthisis than in acute pneumonia. It follows that close observation of the circulation in the course of phthisis is imperative, and that a weak second pulmonic sound is to be regarded as a danger signal, just as in acute pneumonia. Overexercise is considered by von Ruck as a potent factor in the production of tachycardia in consumptives, and he cites statistics from the Winyah Sanitarium showing that of 60 patients with disturbed heart action, in 58 per cent. overexercise had been a contributing factor in its

causation. For the entire number of 261 patients, the figures show 72.9 per cent., whereas for those with tachycardia the figures show only 34.1 per cent. The restriction of exercise for consumptives with weak hearts is strongly urged, and the physical management of such patients, together with the regulation of the diet, bathing, etc., is described in detail.

4. **Relation of Ethmoidal Inflammation to Asthma.**—Coggeshall says that asthma is a name given to paroxysmal difficult breathing, and that the disease is an inflammation of the mucous membrane of the ethmoidal cells. An irritation of branches of the trigeminus or olfactory nerves causes an altered activity in the medulla; that is to say, in the center of respiration. The result in the bronchial tubes is a vasomotor disturbance or a contraction of muscles, or both. Chronic bronchitis, or emphysema, or a dilated right side of the heart, are not asthma. They are sequels to asthma of severity and long standing. Other varied factors are the contributory causes of asthma. Errors of nutrition, errors of diet, gout, obesity, lymphatism, impure air and poor circulation are such causes. To these may be added direct irritants to the nasal mucous membrane, such as various pollens, emanations from animals, dust, smoke, and many others in the cases of the sufferers from periodic asthma. Coggeshall outlines a plan of treatment directed toward the correction of the chronic inflammation in the ethmoidal cells.

5. **Difficult Diagnosis in Case of Abdominal Pregnancy.**—Langfitt's patient came under observation a month after a missed labor. She had a temperature of 101 F. and other signs of infection. On opening the abdomen, the uterus was found to be very slightly enlarged and displaced by a large mass occupying the pelvic cavity and attached to the right Fallopian tube. The fetus, which was dead and disorganizing, weighed six pounds. The removal of the mass was successfully accomplished, in spite of the many adhesions, but the patient died a week later of the septic condition present at the time of operation. Langfitt points out the necessity for careful diagnosis and prompt action in such cases, as it seems likely that the woman would have recovered if she had come to operation before infection had begun.

Medical News, New York.

June 3.

8 *Prophylaxis of Lobar Pneumonia. J. M. Anders, Philadelphia.
9 *Causes Underlying Prolonged Loss of Function in Certain Injuries About the Shoulder Joint—Prognosis—Treatment. A. S. Taylor, New York.
10 *Plea for Medical Treatment of the Inflamed Appendix. A. L. Benedict, Buffalo, N. Y.
11 *Late Results of Surgical Treatment in Gastric Ulcer—Preliminary Report. J. C. Munro, Boston, Mass.
12 *Laryngeal Complications of Typhoid Fever. R. H. Johnston, Baltimore, Md.
13. Rotary Lateral Curvature of the Spine. L. W. Ely, New York.
14 Effect of Intestinal Antisepsis on the Excretion of Hippuric Acid in the Urine. J. B. Prager, New York.

8. **Prophylaxis of Lobar Pneumonia.**—According to Anders, the most efficient prophylaxis for pneumonia must have reference to the accomplishment of four main objects: 1. To overcome individual predisposition. 2. The prompt and thorough disinfection of the sputum and secretions of the upper respiratory tract. 3. Isolation of the patient, especially from the debilitated, and disinfection of the sick room, together with its contents, after death or recovery. 4. The observance of certain public measures. The prevalence of influenza during the last fifteen years has brought about an increased receptivity for and incidence of the pneumococcus infection. Certain degenerative lesions, especially of the cardiovascular system and the kidneys, have shown increased incidence during the last two decades; and these are found to be associated or antecedent conditions in the majority of cases of pneumonia, hence are probably potent, predisposing factors. The indoor conditions during the cold season favor multiplication and propagation of the pneumococcus and at the same time tend to diminish resistance to infection by the specific organism. The aged are peculiarly susceptible to pneumococcus infection, hence their bodies should be kept as strong and healthy as possible, especially during the pneumonia season. To overcome the predominating factors in individual predisposition, special attention must be paid to the subject of ventilation, to appropriate clothing, and to the avoidance of agencies that cause degeneration of the heart, blood vessels and kidneys, as alcohol, social excesses, an overstrenuous business or professional life, and the like. The sputum is the principal source of infection, and should be thoroughly disinfected so soon as it is expectorated and then destroyed by burning. A large proportion of the general populace harbors the pneumococcus in the nasopharynx, and this is especially true in families and in institutions in which cases of pneumonia have occurred; hence thorough cleanliness and systematic disinfection of these chambers should be carried out during the pneumonia season, more particularly in the case of persons more or less exposed to the virus of the disease. Means to prevent dust from accumulating and its daily removal from the home and the city streets are imperatively demanded. Public health authorities should be given full executive power to carry out rules and regulations relative to pneumonia looking to the prevention of its spread, as in the case of other infectious and contagious diseases; they should also carry on a campaign of public education. Measures of prophylaxis must accord with intelligent public opinion before they can be rendered wholly efficient either by municipal or private authority.

9. **Causes of Loss of Function in Injuries About Shoulder Joint.**—In cases of injury about the shoulder joint followed by prolonged disability, Taylor says that the paralyzed muscles are in groups corresponding to the exit of their motor nerve supply in the roots of the brachial plexus from above downward. The lesion is situated in the roots of this plexus, most commonly at the junction of the fifth and sixth cervical roots, but it may involve any portion or all of the roots from above downward. The lesion is caused by too great diastasis of the head and neck from the shoulder, which results in overstretching of the nerves, followed by paralysis, traumatic neuritis, and often cicatricial compression of the nerve, with permanent impairment of function. The prognosis is not very favorable. Treatment consists of immobilization of the extremities, with counter irritation over nerve roots, followed later by massage, electricity, etc., and finally, surgical interference, in selected cases.

10. **Medical Treatment of Appendicitis.**—Benedict argues in favor of medical treatment of appendicitis and discusses the reasons therefor. He does not hold that this is the treatment for every case of appendicitis, but simply pleads for proper discrimination and rational treatment, not neglect under morphin in cases in which operation is unnecessary. The medical treatment of the acute and subacute case should be based on the conception that in most cases the ordinary colon bacillus and other regular inhabitants of the bowel are responsible for the diseased process. He holds strongly to the belief in free catharsis, and, if indicated, bowel and stomach washes.

11. **Late Results of Surgical Treatment of Gastric Ulcer.**—Of 146 cases of operation for lesions of the stomach, Munro reports on the end results in 134 cases, or 91 per cent. Of this number, 90 operations were done for gastric ulcer, and in 9 cases the end results are known. Munro says he does not feel that the ideal method for the routine case is attained, but the results are sufficiently encouraging to stimulate him to carry on the operative treatment. The merits and demerits of the various operations employed are discussed in detail.

12. **Laryngeal Complications of Typhoid Fever.**—Johnston emphasizes the importance of a careful laryngoscopic examination in all cases of typhoid showing laryngeal complications. Prompt diagnosis and treatment of the milder complications may prevent the disastrous results arising from the more serious affections of the larynx. Most of the conditions tend to recover, and expectant treatment is all that is necessary in the majority of cases, such as a mild spray of an oily solution of camphor and menthol and non-use of the voice. When ulceration or perichondritis is present, submucous laryngitis must be watched for, and, should it arise, energetic treatment must be instituted at once. Sprays of adrenalin, the swallowing of small pieces of ice, and perfect quiet may tide the patient over. If marked symptoms of stenosis make their appearance, tra-

cheotomy, promptly performed, is the best means of saving life. When permanent adhesions form as a result of the inflammatory process, the tracheotomy tube may have to be worn indefinitely.

American Medicine, Philadelphia.

June 3.

15 *Further Remarks on Ischochymia and Its Treatment. M. Einhorn, New York.
16 *Bright's Disease in High Official Circles at the Nation's Capitol. T. L. MacDonald, Washington, D. C.
17 Observations on Amebas Infecting the Human Intestine, with a Description of Two species, *Entameba coli* and *Entameba Dysenteriæ*. C. F. Craig, San Francisco, Cal.
18 Office of the Spleen: An Essay in Comparative Physiology. E. T. Williams, Boston, Mass.
19 *Malarial Infection Presenting Symptoms of Multiple Neuritis. G. E. Price, Philadelphia.
20 Lloyd Reaction for Morphin and Other Alkaloids. D. W. Fetterolf, Philadelphia.

15. **Treatment of Ischochymia.**—Einhorn describes cases of benign ischochymia with intense peristaltic restlessness of the stomach which were cured by medical treatment. He also reports cases of ischochymia with a short history of disease which were benign in character. Two cases are described in which tumors of the pylorus and stomach were seen and palpated during operations and left untouched—the patients, however, recovering entirely and remaining well for many years. The indications for medical and surgical treatment of ischochymia are given as follows: (1) Benign ischochymia requires, first, medical treatment; if this be unsuccessful, i. e., if, after a longer period, the fasting stomach, on a fluid diet, is not empty, but contains food remnants, an operation is advisable. (2) Surgical intervention is also indicated in benign ischochymia which has developed subsequent to a condition of continuous hypersecretion of gastric juice (preceded by hemorrhage or not). (3) Malignant ischochymia or one of dubious nature in which, however, a thickening of the pylorus is found, should also be treated surgically (gastroenterostomy and, if possible, resection of the pylorus).

16. **Bright's Disease in High Official Circles at the Nation's Capital.**—Macdonald says that the strenuous life, excessive mental activity and the corresponding degree of physical quiescence and years of overindulgence in rich foods, with the associated high blood pressure, are the essential causes which render Bright's disease frequent in the high official circles at Washington. In conclusion he emphasizes the following facts: Unemployed food products become toxic irritants and menace the structural integrity of the kidneys. Man is an organism built round an eliminative system; when that is abnormal he can not be normal. When the balance between ingestion, metabolism, and elimination is absent, danger is present. Apparently nutritional excess is the germ of nephritis. Mental activity and physical quiescence aid in its production. Carking care and the corrosive influence of worry and mental strain render prominent aid in producing it. It is prone to attack the intellectual and the anxious. Alcohol, while offering it encouragement, has been given a too conspicuous place as a causative agent. It is an extremely insidious disease, and is often well advanced when discovered. It is so far-reaching that its first noticeable effects may be visited on organs and tissues remote from the original disease. The conditions which lead to it are quite amenable to correction if efforts are made sufficiently early. It occurs somewhat frequently at the nation's capital because the congregation of eminent public men means a concentration of worries, wealth, and official feasting.

19. **Malarial Infection Presenting Symptoms of Multiple Neuritis.**—Price reports the case of a girl, aged 8, who had multiple neuritis of 18 months' duration, following malarial infection. The symptoms were pain, paresthesia, tremor of hands, diminished power in all extremities, particularly marked in the flexors of the ankles, and giving the characteristic "foot drop." There was also a slight intermittent rise of temperature. The malarial parasite of the estivo-autumnal variety was found in the blood.

New York Medical Journal.

June 3.

21 *Medical and Surgical Treatment of Gastric Ulcer. B. Robinson, New York.
22 *Medical Treatment of Gastric Ulcer. J. Friedenwald, Baltimore, Md.
23 *Employment of Celluloid Plates for Covering Openings in the Skull in Operations for Epilepsy, Brain Tumor, etc. W. P. Nicolson, Atlanta, Ga.
24 *Recurring Subluxation of the Femur an Unusual Sequel to an Incomplete Fracture of the Neck of the Femur. P. Le Breton, Buffalo.
25 Loss of the Sign Language in a Deaf Mute from Cerebral Tumor and Softening. C. W. Burr, Philadelphia.
26 Prevention of Insanity in Its Incubation by the General Practitioner. J. T. W. Rowe, New York.
27 Inguinal Bubo as a Complication of Malarial Fever; Additional Report. A. C. Smith, New Orleans.

21. **Gastric Ulcer.**—Robinson has collected the histories of 35 cases of gastric ulcer, in which 18 of the patients were operated on, the balance having been placed under medical treatment. The results of operations were ten deaths, seven recoveries, with the result unknown in one case. The results of medical treatment were no deaths, ten cured, one improved, with the results unknown in six cases. Of the patients operated on, a gastroenterostomy was done in five—four posterior, one anterior. Most of the other operations were for emergency cases and consisted in sutures of the ulcer area only. Of 43 cases of gastric ulcer at another hospital, 39 patients were under medical treatment and four under surgical treatment. Of the medical cases, 26 patients were cured (in one, no treatment); improved 10; unimproved 1; died 1; unknown 1. In the four surgical cases, one gastroenterostomy was done, one excision of the ulcer, one exploratory operation, and one McGraw ligature operation. Robinson concludes that acute gastric ulcer must be recognized clinically, for it usually heals, and the treatment is purely medical. A considerable minority fail to do so and constitute a share of the chronic ulcers. Despite the brilliant results of gastroenterostomy in the treatment of gastric ulcers, there may be forcible objections to it. Any form of gastroenterostomy is a grave operation. However, in emergency cases no rational preventive medical treatment can be carried out.

23. **Celluloid Plates for Covering Skull Defects.**—Nicolson discusses the use of celluloid for closing in defects in the skull, the result of operations for epilepsy, brain tumor, etc., and reports 6 cases, giving a description of the technic employed by him. Nicolson makes the following claims for the routine application of this principle to all operations where we are compelled to make openings of any size in the skull, or where a larger area has been removed by accident: 1. It is safe, does not add any risk to the operation, and the materials required are easily obtainable. 2. It not only removes the pressure and irritation, but, by its resistance, prevents a recurrence from the subsequent consolidation of the coverings in a false position, due to atmospheric pressure. 3. It protects the patient from external influences, and not only makes him feel safer, but actually safer. 4. It enables us to be much more untrammelled in the amount of bone that we can remove. 5. It prevents deformity which, especially when beyond the hair line, is necessarily great in large bone removals, and this produces an important cosmetic result. 6. It does away with the necessity for introducing substances for preventing adhesion between the scalp and dura mater. 7. In the event of a necessity for subsequent invasion of the brain it enables one rapidly to reach the seat of trouble, without finding adhesions to confuse and to obstruct.

24. **Subluxation of Femur.**—The interesting points in LeBreton's case were that a recognized incomplete fracture had been received which nature repaired. The patient adopted a position to favor the leg, which finally resulted in a stretching of the capsule of the joint and a tendency to luxation, so that while standing and walking the head of the femur was not in the acetabulum. A short period of immobilization by plaster cured this very marked deformity.

Boston Medical and Surgical Journal.

June 1.

28 *The Experience of Nine Years in the Treatment of Diphtheria with Antitoxin. J. H. McCollom, Boston.
29 Description of "Pfeiffer's Disease" (Glandular Fever), with a Report of Two Cases. A. H. Wentworth, Boston.
30 Report on Early Diagnosis of Tuberculosis. A. C. Klebs, Chicago, and others.
31 Consideration of the Pelvic Articulations from an Anatomic, Pathologic and Clinical Standpoint. J. E. Goldthwait and R. B. Good, Boston.

28. **Nine Years' Experience with Diphtheria Antitoxin.**—Following a brief review of the early history of diphtheria, McCollom discusses the treatment with antitoxin in Boston and in several other cities in the East. The article is elucidated by a number of charts. Chart A shows the percentage of mortality at the Boston City Hospital proper and at the South department from 1888 to 1904, inclusive, with the percentage of mortality of intubations. Previous to 1895 the death rate varied from 46 per cent. in 1888 to 48 per cent. in 1893. In 1890 and in 1894 the death rate was 36 per cent. and 38 per cent., respectively. In 1895, in the latter part of which year the South department was opened and antitoxin was given to every patient ill with diphtheria, the death rate fell to 14 per cent. Since that time it has fallen gradually to 9.5 per cent. If the deaths that occurred within twenty-four hours of admission are eliminated, of which there were forty, the actual mortality of diphtheria amenable to treatment during 1904 was 6.95 per cent. The mortality rate of intubation cases previous to the use of antitoxin varied from 78 to 86 per cent. From 1895 to 1904, the mortality rate of these cases varied from 64 to 26 per cent. This diminution in the mortality rate is attributed to the use of antitoxin. Chart B indicates the ratio of mortality per ten thousand of the population for thirty years. Chart C shows the percentage of cases of diphtheria sent to the hospital, with the percentage of deaths to the population from 1888 to 1904, inclusive. Chart D shows a ratio of mortality per ten thousand of the population in Boston, New York, Philadelphia, and Brooklyn for the past twenty years. Chart E shows the relative advantages of intubation with antitoxin as compared with tracheotomy without and intubation without. McCollom concludes that antitoxin is of immense value in the treatment of diphtheria, but in order to obtain the best results it is important that the serum should be given at the earliest possible moment in the course of the disease. In severe attacks, it should be given in very large doses. In laryngeal diphtheria, in the majority of instances, intubation is the operation of election.

Lancet-Clinic, Cincinnati, Ohio.

May 27.

32 Considerations on Inherited Syphilis, with Special Reference to Paternal Inheritance. A. Ravogli, Cincinnati.
33 *Medical Aspects of Appendicitis. J. Eichberg, Cincinnati.
34 Pathology of Typhoid Fever. J. E. Griewe, Cincinnati.
35 Clinical History of Typhoid Fever. E. Campbell, Cincinnati.
36 Typhoid Fever Treatment. J. H. Landis, Cincinnati.
37 Surgical Treatment of Perforation in Typhoid. N. P. Dandridge, Cincinnati.

June 3.

38 Cerebrospinal Meningitis. G. A. Fackler, Cincinnati.
39 *Bi-Inguinal Celiotomy. S. Stark, Cincinnati.
40 Typhoid Fever in Children. W. W. Pennell, Mt. Vernon, Ohio.

33. **Medical Aspects of Appendicitis.**—Eichberg discountenances what he terms the "frantic hurry" to unload the bowel, and urges that nature be given a chance to circumscribe the seat of danger with a wall of lymph, which makes surgical intervention more easy and successful. If the case does not call for immediate operation, no harm is done by allowing the bowel to rest for 36 or 48 hours. The colon can then be unloaded by a small enema. He considers it of some advantage to give from the start one-tenth grain doses of calomel at intervals of two hours. Morphia, which he gives invariably, goes well with calomel. All food is withheld for at least 48 hours, and a tablespoonful of water, not too cold, is given every half-hour. He says that, in his hands, this treatment has averted the necessity of operation in a number of patients who have not had more than the primary attack. The patient must be watched carefully as to pulse, respiration, facial expression and local conditions, and from these deductions can ordinarily be drawn safely as to whether his interests require more than the purely medical treatment.

39. **Bi-Inguinal Celiotomy.**—This operation described by Stark differs from the Goldspohn operation in the closure of the peritoneal cavity, the suture of the round ligament to Poupart's ligament, and the disposal of the internal abdominal ring and inguinal canal. The incision is made in the line of the inguinal canal from the spine of the pubes to a point a short distance above the internal abdominal ring, altogether from two and a half to three inches in length. The aponeurosis of the external oblique being exposed, the intercolumnar fibers are split and the incision through this fascia is continued upward and downward toward the internal ring. The lower portion of the aponeurosis is rapidly separated from its adjacent tissues with the index finger until Poupart's ligament is reached. This flap is then held downward in the grasp of a wide-mouthed hemostatic or by means of a blunt retractor and all the tissues imbedded in the canal rapidly raised by dissection with the finger. The complete isolation of the ligament from its surrounding structures is then effected, and a strip of gauze is passed underneath, through the medium of which all further manipulation on it is carried out. With the continuance of traction, a pouch of peritoneum is made to present above the ligament, and this is snipped transversely with the scissors. The peritoneal cavity now being opened, the aperture is caught on either side at its upper extremity by two artery forceps, and, while traction on the ligament is kept up, the peritoneum is severed closely from its attachment to the ligament on either side with the scissors as high up as may be deemed desirable. One or two fingers are introduced into the peritoneal cavity in order to determine the presence of pelvic adhesions and to remedy the same, to investigate the condition of the appendages of that side, and, if need be, to operate on them and to note the degree of uterine support in the round ligament while traction is being made thereon, and to liberate it still further from the broad ligament if the support is insufficient. The wound is then packed with gauze wrung out of hot salt water and the same procedure is gone through with on the opposite side. The peritoneal cavity is closed by catching the upper portion of the opening by means of an artery forceps in such a manner that the opposing surfaces of the peritoneum are approximated and are united by means of a fine continuous catgut suture, the last stitch including the inner border of the ligament, which has been continuously drawn on by means of the gauze strip. The round ligament is then sutured to Poupart's by means of interrupted fine silk sutures, the first stitch being applied just below the lower border of the internal abdominal ring. Three or four sutures are employed and the redundant proximal portion of the ligament is held together in the form of a loop, the base of the loop tied off with catgut and the portion above the ligature cut off. Closure of the internal ring is accomplished by suturing the internal oblique transversalis muscle and fascia to Poupart's ligament, for which silk is used. Ordinarily, it is unnecessary to close off any more of the canal, but should it seem weak or should a hernia exist the remainder of the conjoined tendon can be sutured to Poupart's ligament above the attachment of the round ligament. The divided aponeurosis of the external oblique is brought together by interrupted catgut sutures and the skin wound closed in the ordinary manner by subcuticular suture or interrupted silkworm gut. The other side is treated in the same manner. If a suitable pessary has not been introduced before the operation because of adhesions interfering with replacement, this is now done and permitted to be worn two or three months.

St. Louis Medical Review.

May 27.

41 *Two Cases of Congenital Anomalies of the Female Genital Tract. S. M. Brickner, New York.

41. **Congenital Anomalies of Female Genital Tract.**—Brickner cites one case of atresia hymenalis, with hematometra and hematocolpos, and one of total atresia of the vagina, with absence of the uterus.

Annals of Otology, Rhinology and Laryngology, St. Louis, Mo.

March.

42 Contribution to the Study of the Secreting Mechanism of the Nose. J. L. Goodale, Boston, Mass.
43 *Skiagraphy as an Aid in the Diagnosis and Treatment of Diseases of the Accessory Sinuses of the Nose. C. G. Coakley, New York.
44 Radical Operation for Chronic Suppurative Otitis Media. W. C. Phillips, New York.
45. Further Remarks on a Case of Cholesteatoma. W. H. Dudley, Easton, Pa.
46 *Mycosis of the Throat Treated by the Roentgen Ray. L. M. Hurd.
47 *Technic of the Radical Operation for Chronic Suppurative Otitis Media. J. D. Richards, New York.
48 Brain Abscess, Resulting from Chronic Purulent Otitis Media. J. F. McKernon, New York.
49 Case of Sarcoma of the Maxillary Sinus. Z. L. Leonard, New York.

50 Caries of Both Petrous Pyramids—Removal of the Entire Petrous Portion of the Cranial Base. P. Cauzard, Paris.
51 Relative Frequency of the Dental and Nasal Origin of Antral Empyemata. G. L. Richards, Fall River.
52 *Results from the Treatment of Vertigo, Tinnitus and Deafness by Babinski's Method. Dr. Tretop.
53 Lumbar Puncture and Affections of the Ear. E. Lombard and H. Caboche.
54 Appearance of the Fundus Oculi in Diseases of the Ear. F. Tenzer, Berlin.

43. **Skiagraphy in Diseases of Nasal Accessory Sinuses.**—Concerning the value of skiagraphy as an aid in the diagnosis and treatment of disease of the accessory sinuses of the nose, Coakley says that it is possible by means of a skiagraph to determine the presence or absence of a frontal sinus which extends vertically above the glabella. A frontal sinus may be small, parallel with the upper inner margin of the orbit and not detected in the skiagraph. In all cases of unilateral disease of the frontal sinus verified by operation, he has observed a cloudiness in part or all of the area occupied by the sinus and indistinctness in the outline of the cavity when compared with the opposite or healthy side. The skiagraph has invariably shown the frontal sinus to be somewhat larger in all dimensions than it proved to be when operated on. This is undoubtedly due to the divergence of the rays as they pass from the tube to the plate. A good negative may be depended on to show the septum separating one sinus from another. The various incomplete septa that may be present in each sinus are usually shown quite clearly. An oblong, narrow, much darker area, nearly parallel with the upper margin of the orbit on its nasal side, and usually just above it, whenever present, has been found to be an orbital prolongation of the frontal sinus, running antero-posteriorly above the orbit, oftentimes the full depth of the latter. The examination of a skiagraph of the two frontal sinuses when compared with results found on transillumination will aid very much in determining the presence of a diseased sinus. Skiagraphy may prove a valuable aid in determining our method of treating a chronic suppurative frontal sinusitis. A skiagraph may also be of considerable value in determining the height and width of the ethmoidal cell area and the sphenoidal sinuses. If the plate can be so arranged as to include the superior maxilla as well, a chronic suppurative process in an antrum presents the same filmy appearance as above noted in similar conditions of the frontal sinus and ethmoidal cells. A healthy antrum presents an irregular, triangular area, dark in color, with a few light colored septa running through it, many of which are ridges present in the wall.

46. **Roentgen Ray in Mycosis of the Throat.**—Hurd's patient was first given ten-minute sittings, twice a week for six weeks. The pain and discomfort diminished after the first two exposures, and after the fourth exposure some of the smaller tufts in the throat became soft and could easily be wiped off. At the end of six weeks the patient discontinued the treatment for business reasons. Three months later, he returned for further treatment, the condition in the throat having remained stationary during this time. He again received ten-minute sittings, but three times a week, and after three months no spots could be found. The tonsils and pharynx were directly exposed to the rays through a speculum something like a Ferguson vaginal speculum with a large flange to protect the face from the rays. The lingual tonsil and larynx were treated with the rays from the outside. In all, the patient received forty-one treatments; a medium tube with a spark gap of about three inches was used.

47. **Radical Operations for Chronic Suppurative Otitis Media.**—In this paper, Richards describes a few points in the technic of the operation which are new and which he deems of some advantage.

52. **Babinski's Treatment of Vertigo, Tinnitus and Deafness.**—Tretrop says that in cases of labyrinthism accompanied or not by lesions of other parts of the auditory organ, when other treatment has no effect, we are justified in proposing lumbar puncture while telling the patient that it is not a panacea, but a method that gives a percentage of cures and also failures. The attacks of vertigo which are often so annoying are the most favorably influenced, then comes the tinnitus, and last the deafness. He states that the persevering and judicious use of Delstanches masseur-rarefier, by decompressing the labyrinthine liquid, in similar cases, may yield unexpected results. Its use by the patient himself, however, must be discouraged, as he will employ it indiscriminately and only do harm. Deaf-mutism appears amenable to this method of treatment. This treatment has a better chance of success if a careful examination shows that some internal ear perception still exists and that the latter can be developed by appropriate educational treatment. The method can be advised only as a chance of cure, without promising anything. In both classes of cases—pure labyrinthine affections and those complicated with deaf-mutism—careful examination, noting the lesions and measuring the hearing power, is necessary before operation, if errors would be avoided.

University of Pennsylvania Medical Bulletin, Philadelphia.
May.

55 *Action of Alcohol on the Circulation. H. C. Wood and D. M. Hoyt.
56 Occurrence of Epidemic Cerebrospinal Meningitis in Philadelphia, Winter 1904-05. A. C. Abbott, Philadelphia.
57 Metastatic Ophthalmitis, with the Report of a Case which Developed Thirty-one Days After Confinement. G. E. de Schweinitz.
58 *Study of Fifty Cases of "Perforation in Typhoid." J. A. Scott.
59 Use of Iodid of Silver in Urethritis. E. H. Siter and A. A. Uhle.
60 Studies on Cell Granula and Ameboid Movements of the Blood Cells of Limulus. L. Loeb.

55. **Action of Alcohol on the Circulation.**—The facts which Wood and Hoyt have determined experimentally in regard to the action of alcohol on the circulation are: 1. In the normal dog alcohol does not usually either in small or large dose distinctly increase the arterial pressure, although occasionally such an effect appears. 2. The action of alcohol on the circulation in dogs suffering from an infective fever, so far as the blood pressure is concerned, is similar to its influence on the normal dog. 3. After section of the spinal cord in the cervical region, with maintenance of the respiration, alcohol distinctly and consistently increases arterial pressure; in other words, alcohol increases arterial pressure after the general vascular system has been separated from its dominant vasomoter centers. 4. The administration of small doses of alcohol increases very markedly the rate of flow of blood through the large arteries, as measured by Ludwig's stromuhr. This increase of rate being consistently maintained under the repetition of the intravenous injection of alcohol until the time comes when the rate of flow gradually lessens until, under the paralytic influence of the alcohol, it becomes much smaller than its normal. The increase of the rate of flow is in nowise dependent on or directly related to the arterial pressure, as it may occur without the pressure being sensibly affected. 5. Alcohol .25 to .5 per cent. added to nutritive fluid feeding an isolated working reptilian heart markedly and persistently increases the amount of this fluid pumped in a given length of time by the heart; that is, markedly increases the work done by the heart, the withdrawal of the alcohol being followed at once by a corresponding decrease in the heart work. If from .50 to 1 per cent. of alcohol be added to the nutritive fluid there may be a primary condition of increase of work, followed often in a few minutes by marked lessening of the work done. Larger percentages of alcohol immediately decrease the activity of the isolated reptilian heart.

58. **"Perforation of Typhoid."**—In 1,948 cases of typhoid studied by Scott, there occurred 153 deaths, a total mortality of 7.8 per cent. In this same number of cases there occurred 50 cases of perforation. Scott concludes that perforation of the bowel in typhoid fever is more common than is generally supposed, occurring once and a trifle over in every three deaths. The most common time of perforation is between the fourteenth and the twenty-first days. In 92 per cent. of the cases in this series, the perforation occurred between the second and fifth week, inclusive. The earlier cases are probably perforation in a relapse; now and then perforation may occur without evidence of previous illness. Perforation occurs in cases of all grades of severity, from the ambulatory to the hemorrhagic type. It is most common in those with moderate (25 per cent.) and severe (50 per cent.) infection (75 per

cent.). It is not more common in the hemorrhagic than in the mild cases (8 per cent. each). The ileum is the common site of perforation (86 per cent.); the majority occur within twelve inches of the ileocecal valve; the appendix and colon respectively are the next most frequent sites of perforation in this series of cases. Pain of some kind is present in 75 per cent. of all cases. In 50 per cent. of the cases the onset is sudden and severe and of increasing intensity, localizing itself to a special zone. In 20 per cent. of the cases the pain is of slow onset, not localized, with general distribution. In some cases (12 per cent. of this series), no pain is complained of, and the usual symptoms of perforation are absent. Tenderness and rigidity are present in from 75 to 65 per cent., respectively, of all cases, and are usually combined; in some cases either one or the other may be wanting; rigidity especially may be absent in patients with rather a pendulous and relaxed abdominal wall. When perforation is suspected, the temperature should be taken every hour; only by this means can the immediate rise and slow fall to normal or subnormal which often occurs be detected; in some cases, and especially those of extreme toxicity, no noteworthy change at all in the pulse, temperature, or respiration can be detected when perforation occurs. Distention (if absent during the course of the disease and at the time of suspected perforation) is a late symptom of perforation. The obliteration of liver dullness is not a reliable sign of perforation. The study of the leucocytes is of little aid. In a few cases, their increase is such as to confirm the diagnosis. In a considerable number of cases, there is a decided reduction in leucocytes after symptoms of perforation. Differential counting is not of practical use. Before being assured of the diagnosis, right-sided pleurisy, pneumonia (especially in the young), cholecystitis, acute gastrointestinal indigestion, femoral and iliac thrombosis, appendicitis, peritonitis without perforation cystitis, rupture of a mesenteric gland, or even hemorrhagic exudation into the abdominal muscles (Zenker's degeneration) should be considered. Even then mistakes in diagnosis will be made. While nature will infrequently close one, two, or even three perforations, the only rational procedure when perforation occurs is operative interference. No case is too desperate for the attempt. Not infrequently, in the so-called mild cases, the patient succumbs, while very ill patients recover. The diagnosis made, time for operation has arrived; its important point is rapidity. Closure of the perforation and drainage is all that is needed; from fifteen to twenty minutes should suffice.

64. **Catarrhal Deafness.**—Lautenbach considers those cases of deafness often termed "dry" cases as distinguished from the results of suppuration—cases in which the drum-head is unruptured; when the deafness is not of centric or nervous origin, not caused by the direct action of toxic agents, nor the result of injuries. Nose disease is practically always the cause of catarrhal deafness. Nose diseases are usually curable and easily controlled in the early stages, and treatment should be persisted in until this is accomplished, but they are difficult to cure when of long standing. The proper way to avoid catarrhal deafness is to cure the nose in the first stage before the ears become affected. This is the best treatment and is prophylactic, should the ear disease be present and in its incipiency. In the second stage, treat the nose vigorously and treat the ears carefully and persistently until a cure is effected. This is next to the best method and is practically always positive in its results. Should the ear disease be of long standing, treat the nose, but be sure to treat the ears vigorously and persistently, using both ability and patience to the greatest possible extent until the maximum of hearing and comfort is attained in that particular patient. Afterward see the patient at regular intervals of from three to six months, in order to see that there may be no retrogression. If this occurs, commence treatment anew. In this class of cases this is the best that can be done. The results may not be so favorable as we may desire, but under the conditions they are the best attainable. It is to avoid this third stage that we should devote our best efforts. In the first stage, that of disease of the nose only, we can be sure of a cure; in the second stage, we can usually be pretty sure of a cure. It is in one of these two stages that the case should be carefully and persistently treated. In the third stage, the progress of the disease can be stopped and usually the hearing can be improved; the measure of gain depending on the form the disease has assumed and the length of time it has existed.

Pennsylvania Medical Journal, Athens.

April.

61 Tuberculosis of the Gastrointestinal Tract. J. A. Lichty, Pittsburg.
62 Pleurisy with Effusion. J. E. Rigg, Wilkinsburg.
63 Removal of Cataract Without Iridectomy. J. E. Willetts, Pittsburg.
64 Thoughts as to the Cause and Cure of Catarrhal Deafness. L. J. Lautenbach, Philadelphia.
65 Reduction of Maternal and Infantile Mortality in Private Obstetric Practice. D. P. Rettew, Coatesville.
66 Mastoiditis. F. W. Frankhauser, Reading.
67 Autointoxication—Etiology and Diagnosis. I. N. Snively, Philadelphia.
68 Recovery, Without Operation, from Perforation of the Intestine in the Course of Typhoid Fever; Death from Hemorrhage. J. H. Musser, Philadelphia.
69 *Carbonate of Creosote in Pneumonia. C. P. Stackhouse, Wilkesbarre.

69. **Carbonate of Creosote in Pneumonia.**—Stackhouse finds that carbonate of creosote is of decided value in both the bronchial and lobar forms of pneumonia. In mild cases, if the patients are seen early, they are practically well in 24 hours. In severe cases, there is usually a response within 24 hours and normal conditions are reached in from 2 to 5 days by lysis. Complications are rare, and if present are mild. Convalescence is shortened. Children respond more promptly than adults.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

May 20.

1 *Causes and Treatment of Edema. J. D. Mann, Salford Royal Hospital.
2 Treatment of Purulent Cavities. R. H. Woods, Dublin.
3 Frontal Sinus Empyema Followed by Subdural Abscess. A. J. Martineau, Brighton.
4 *Remarks on Complete Prostatectomy Founded on Fifteen Cases. J. L. Thomas, Cardiff.
5 Series of 60 Cases of Total Enucleation of the Prostate for Radical Cure of Enlargement of that Organ. P. J. Freyer.
6 *Treatment of Tuberculosis and Tuberculin Inoculation. T. W. Brown, Wallington.
7 *Treatment of Seasickness. J. M. Sharpe, R. M. S. *Ultonia.*

1. **Edema.**—Mann discusses the various theories of the causation of edema, and details the treatment of this condition in full. In cardiac edema, when the heart alone is at fault, physiologic rest is the most potent of all remedial agents; but in most cases of failure of cardiac compensation, rest alone is insufficient to restore it. Of drugs he prefers digitalis to strophanthus. When the incompetent kidneys fail to respond to the stimulus of diuretics, hot air baths and vapor baths must be resorted to. He advises against allowing the patient to drink copiously of water during the administration of the bath, because the water thus drunk is added to that which is already retained, and, therefore, in proportion to its amount, it neutralizes the remedial action of the bath. Regulation of the diet is also of importance. The indications are to avoid excess of proteids and of such dietetic substances as are likely to irritate the renal epithelium or to increase the retention of water. The quantity of liquid allowed to dropsical patients with Bright's disease should be determined by careful consideration of the conditions involved. The plan frequently adopted of causing the patient to drink copiously of liquids in order to promote the elimination of end-products is fallacious on two grounds: First, the kidneys are incompetent to excrete urine of normal molecular density, consequently it is poor in solid constituents; second, the fact that edema is present indicates a tendency to retention of water which lays under contribution the whole of the liquid imbibed, leaving but a small proportion of the excess to act as the vehicle for carrying away effete products in the urine, so that the edema is increased in place of the tisues being flushed out. On the other hand, undue restriction of liquids impedes the

output of a certain proportion of solid constituents which the kidneys are still competent to eliminate, provided that the volume of urine be not arbitrarily checked. When the volume of urine is ample, the intake of liquid usually needs no restriction with scanty urine, the intake should be adjusted by comparing daily the intake with the weight of the patient; increase in weight would suggest restriction of intake. It is better to aid diuresis by a sufficiency of water than to attempt to induce it by copious imbibation.

4. **Prostatectomy.**—Thomas reports on 15 prostatectomies—13 suprapubic and 2 perineal—with 2 deaths, 1 the result of operation, occurring 48 hours afterward, and the other due to pneumonia, about nine days after operation. The ages of his patients varied from 56 to 77. The two patients who died were operated on by the suprapubic method. Thomas says, speaking of the use of antiseptics in these operations, that weak antiseptic solutions for washing out the bladder are only a source of local irritation, plus the possibility of being absorbed and throwing unnecessary tax on the eliminating organs. Sterilized salt solution is better for irrigation, because the beneficial effect is really due to the mechanical removal of surgical dirt. Antiseptics to be of any germicidal value must be strong, and for suprapubic operations on the bladder pure tincture of iodin poured into the bladder (2 to 4 drams) through the suprapubic opening is an excellent preparation to correct septic conditions either at the time of operation or at subsequent dressings. It is better than any powder, he states, because it runs into all the nooks and crevices, and comes into contact with the entire field of operation.

6. **Tuberculosis and Tuberculin.**—Brown reports a case of tuberculous ulceration of the bladder which, failing to respond to antiseptic and constitutional treatment, was treated with tuberculin, Koch's TR. Beginning with .04 mg., the dose was raised gradualy to .25 mg., which was continued, every other day, for a week, when the patient was given .5 mg., every four days, for about one month. The dose was then increased to .75 mg., which was kept up for about one month, when it was increased to 1 mg., which was given once a week, and is still being used. After three months of tuberculin treatment the ulcers in the bladder had healed completely, but there were still present a few scattered nodules. The patient had increased in weight and shows a general improvement.

7. **Treatment of Seasickness.**—Assuming that seasickness is a reflex action of the stomach to a certain stimulus, and that this stimulus enters the brain through the optic tract, Sharpe advises the following treatment, which he has used successfully in 50 cases: Two or three drops of a solution of atropin (4 gr. to the ounce) or other mydriatic were dropped into one eye daily, after a satisfactory examination with the ophthalmoscope, etc., or, when the patient objected, one eye was merely bandaged; thus, by altering the principal focus, the motion of objects on board a ship (which no doubt forms the impulse) is not so uniformly transmitted to the brain.

The Lancet, London.

May 20.

8 Financial Relations Between the London Hospitals and Their Affiliated Medical Schools, and the Bearing of These Relations on Medical Education. H. Morris, London.
9 *Nutrition and Malnutrition. W. H. Allchin, London. (To be continued.)
10 General Cystic Disease of the Kidneys in Brother and Sister; Nephrectomy. E. L. Collis and J. T. Hewetson, Birmingham.
11 *Two Cases of Gangrene with Spontaneous Amputation. E. O. Thurston, Calcutta.
12 Epidemic Cerebrospinal Meningitis and Posterior Basic Meningitis. O. Hildesheim, London.
13 *Pneumococcus Endocarditis Treated by Anti-Pneumococcus Serum. T. J. Horder and H. C. L. Scofield, Edinburgh.
14 *Congenital Elevation of the Scapula. C. R. Keyser, London.
15 Is Man Poitophagic or Psomophagic? H. Higgins, Cambridge.
16 *Influence of Smallpox on Vaccination. J. C. Hibbert, Newcastle-on-Tyne.

9. **Nutrition and Malnutrition.**—This is the third lecture on this subject delivered by Allchin. In it he considers the subject of malnutrition when due to errors in diet, when due to maldigestion and malabsorption, and to perverted metabolism, or to the result of a deficient supply of oxygen, and the most marked of the general structural manifestations of impaired nutrition—atrophy, degeneration and death.

11. **Gangrene with Spontaneous Amputation.**—The two cases reported by Thurston show to what an advanced stage natives of India allow disease to progress before applying for relief. The first case occurred in a man, aged 50, and, judging from the slow onset, was probably due to thrombosis. The amputation, which occurred at about the middle of the forearm, was complete with the formation of a conical ulcerated stump. The second patient, aged 40, had gangrene of the right foot and leg. The leg began to slough, and as the sloughs separated, the patient removed them, until finally only the bones remained from the ankle to the level of the tubercle of the tibia. The gangrene in this case was probably the result of embolism from a thrombosis forming in a weak heart during an attack of fever.

13. **Pneumococcus Endocarditis Treated by Antipneumococcus Serum.**—For five days, during the eighth and ninth weeks of the disease, Horder and Scofield injected 10 c.c. of Pane's serum No. 2. Two days after the last injection signs of nephritis appeared, and six days later the patient died in coma. The authors are of the opinion that the serum was given too late to be of any service, and that death was not the result of the treatment, because death with the symptoms of a terminal nephritis is a common event in malignant endocarditis.

14. **Congenital Elevation of Scapula.**—On examination of his patient, a girl, aged 9 years, Keyser found the left scapula to be two and a half inches higher than the right, but the bone of the same size as its fellow. Movement of the arm, both active and passive, was normal. There was no osseous bridge to be felt between the vertebral border of the scapula and the spine, nor was there any lateral curvature of the spine. The spinous process of the third dorsal vertebra, however, felt thicker than normal and was apparently displaced slightly to the left. The inferior angle of the scapula was on a level with the interval between the sixth and seventh dorsal spines. There was no paralysis of any muscle. The *x*-rays showed nothing abnormal and the two arms were of the same length. The child's head was rickety in appearance, but there were no other signs of rickets or any other deformity. The teeth were slightly notched and ridged, as is generally the case in ill-nourished children. As the child suffered absolutely no pain or inconvenience from her condition, no active treatment was adopted, especialy as the deformity was barely visible, except when the patient was undressed.

16. **Influence of Smallpox on Vaccination.**—In 20 cases of smallpox in which the patients were vaccinated or revaccinated by Hibbert after the appearance of the eruption, 11 vaccinations or revaccinations were successful. No second attempt at vaccination or revaccination was made in the unsuccessful cases. In the greater proportion of the successful cases well-marked typical vaccine vesicles appeared at the site of vaccination or revaccination. These vesicles became evident from the fourth to the sixth day after the operation and ran the usual course. In some cases, instead of the typical vesicle there was merely an indurated raised papule. In two cases of semiconfluent smallpox, one patient was revaccinated on the first day and the other on the third day of the smallpox rash; the vaccine vesicles were extremely well marked. Of the 11 successful cases 10 patients were vaccinated or revaccinated on one or other of the first four days of the smallpox eruption. The eleventh patient was not revaccinated until the fourteenth day of the smallpox eruption. Four raised indurated papules at the sites of the operation gave evidence of successful revaccination in this case. Hibbert could not detect that vaccination or revaccination when performed after the smallpox eruption had appeared had any definitely modifying influence on the rash or on the course of the disease.

Journal of Tropical Medicine, London.

May 15.

17 Note on Yaws. G. Pernet.
18 *Leprosy and Christianity. A. Neve.
19 *Notes on the Fish Theory of Leprosy. A. Neve.

Bulletin de l'Académie de Médecine, Paris.

20 (Year LXIX, No. 26.) *Modified and Sterilized Milk.—Le lait de vache sterilisé, sa valeur nutritive. R. Brunon.
21 Discussion sur la paralysie générale et la syphilis. Raymond. Fournier and Lancereaux.

22 (Nos. 17 and 18.) Cas de trypanosomiase chez un blanc (in a white man). A. Laveran.
23 (Nos. 19 and 20.) *Recherches microbiologiques sur la syphilis. E. Metchnikoff and E. Roux.

18. **Leprosy and Christianity.**—In refutation of the claim made by Jonathan Hutchinson that leprosy and Christianity go hand in hand, Neve calls attention to the fact that in northern India less than 5 per cent. were Christians before they became lepers, and that only one or two cases could be found in which adult converts a few years later became leprous. Of 80,000 Christian kols in Chota Nagpur there are none who are now lepers and were Christians before they were lepers. In Purulia asylum the 503 Christian inmates all became converts after they were lepers. There are no Roman Catholics among the Christian lepers. Of 38,500 Roman Catholic converts elsewhere, only 7 are lepers, all of them leprous before baptism. Not more than 1 per cent. of Christian lepers live out of asylums, so that all Christians who are lepers are registered as such. In the Punjab, where there are 39,000 native Christians, apart from those actually converted in the asylums, Neve discovered only one case of leprosy. In Madras there are 27,485 Jains, of whom 14 were lepers, i. e., 5 per 10,000, as against 4 per 10,000 among Christians, and this last figure is greatly in excess because many of the Christian lepers became lepers before conversion. Among the Brahmins, who are strict vegetarians, leprosy exists in the ratio of about 4 per 10,000.

19. **Fish Theory of Leprosy.**—In this paper Neve shows that the eating of fish has very little, if anything, to do with the causation of leprosy. In the districts of India where fish forms the principal diet of the inhabitants, there are very few cases of leprosy, and in some districts none, while in others, where fish is eaten seldom, leprosy prevails to an alarming extent.

20. **Modified and Sterilized Milk.**—Brunon describes the workings of the charity milk supply station at Rouen which is supplemented by "nursing consultations" twice a week. Here the infants are weighed, their progress supervised, and the mothers advised. The milk is derived from a model dairy where the cows are curried every day and the milkers scrub their hands and clean their nails before milking. The milk is filtered through sterilized cotton and keeps for several days. It is modified for weak infants by withdrawing a third from below and replacing it with an equal quantity of water to which 1 gm. of salt and 10 gm. of sugar to the liter have been added. Four years of experience have demonstrated to his satisfaction that the nutritive properties of a milk should be estimated from the condition of the infants taking it. Also that milk sterilized by heating to 192 C. (215.6 F.) for forty-five minutes retains its nutritive value. A frequent cause of enteritis in infants is that too large amounts of milk are given. The general tendency is to feed too much.

23. **New Spirochaete in Syphilis.**—Metchnikoff's communication was mentioned on page 1790. He is convinced that the data which he presents plead seriously in favor of the assumption that syphilis is a chronic spirillosis, produced by Schaudinn's *Spirochaeta pallida*. He found this spirochaeta in 8 cases of syphilis (4 in man and 4 in monkeys), but could not find it in 2 other human subjects and in 2 other monkeys. He never found it alive. The Giemsa stain was used, applied for sixteen hours or more. When more rapid results were desired, Marino's technic was followed. This consists in mixing a methyl alcohol solution of azure blue with a weak aqueous solution of eosin. The result is not so distinct as with the Giemsa stain, but the positive diagnosis can sometimes be made with it in fifteen minutes. He found no traces of these spirochaetes in a number of non-syphilitic cutaneous affections examined. It has proved impossible to date to obtain pure cultures. The *British Medical Journal* states that Levaditi has discovered the new spirochaete in the lesions of a child suffering from congenital syphilis. (See abstract below.)

Presse Médicale, Paris.

Last indexed page 1719.

24 (No. 33.) *The Enema in Art.—Iconographie du lavement. P. Desfosses.
25 La spermatorrhée et sa thérapeutique. Ré-éducation psychique et traitement somatique. P. E. Levy.
26 Traitement des adénites cervicales tuberculeuses. R Siegel.
27 (No. 34.) *La "scarlatinoide métadiphthérique." A. B. Marfan.
28 Pro et contra les crèches. V. Bué (Lille).
29 (No. 35.) *La "Mutualité Maternelle" de Paris. H. Legrand.
30 *L'anesthésie par l'atropomorphine et le chloroforme. T. Tuffier.
31 Causes et évolution du travail de l'avortement (labor in abortion). E. Bonnaire.
32 (No. 36.) Méningites cérébrospinales à meningocoques. A. Chauffard.
33 (No. 37.) "King's Evil" in France and England.—Le mal du roi. Le toucher des écrouelles en France et en Angleterre. L. Landouzy. Illustrated historical sketch.
34 Le dispensaire antituberculeux de Lyon. J. Courmont.

24. **The Enema in Art.**—This article is a supplement to one on the same subject published last April. A number of quaint old tiles, engravings, etc., have since been found, representing the use of the time-honored instrument in past centuries. It is said that the rectal syringe was suggested by the Egyptian ibis, the sacred bird with a very long neck, which has been depicted in Egyptian art with its beak inserted in its anus.

27. **"Metadiphtheric Scarlatinoid."**—Marfan has coined this term to express the syndrome of the erythema which is liable to develop in a patient convalescing from diphtheria. The general symptoms are frequently so severe that he is inclined to regard it as an actual morbid entity, a new malady grafted on the declining diphtheria. The onset is abrupt, with many symptoms resembling those of scarlet fever, including temperature and swelling of the tonsils and glands. In some cases he has observed three recurrences. The erythema generally subsides in two or three days, but the temperature is liable to remain high until from the third to the sixth day. He presents arguments to prove that this scarlatinoid is not due to the use of the curative serum. It never occurs in healthy children injected with antitoxin, and it spreads in series of cases. He regards it as an associated or secondary infection, and discusses whether or not it should be classed with the infectious erythemata or whether it is a true scarlet fever grafted on the diphtheria, but modified in its course by the preceding disease. It is impossible to differentiate positively true scarlet fever from this metadiphtheric scarlatinoid. The fact that the latter has been observed only since serum treatment has been instituted has led to its being considered as due to the serum. This connection is only apparent, however; in the ante-serum days the patients were apt to die before this stage was reached. Since Marfan has been impressed with the resemblance and possible identity of this infectious erythema with scarlet fever, he has the patients isolated at once at the first symptoms, and every child entering the diphtheria ward is isolated for five days as if known to have been exposed to scarlet fever. Since these precautions have been taken, the number of cases of this erythema have been reduced to almost zero, while urticaria after injections of antitoxin has persisted in about the same proportions. This is another argument in favor of the infectious nature of the erythema. Its course is generally short and comparatively mild. He mentions, in the course of his article, that diphtheria under serum treatment is quite a different disease from the classic type of a few years ago.

29. **"The Mutual Maternal" Association.**—The members of this society pay about sixty cents a year, and these dues entitle them to $2.40 a week for the first four weeks after a childbirth, with an additional $2 a week if they nurse the child. During the last ten years over four thousand mothers were thus aided, and the mortality of the infants has been reduced to 6 per cent., while the birth rate has risen.

30. **Mixed Anesthesia with Atropin-Morphin and Chloroform.**—Tuffier relates his experiences with mixed anesthesia a few years ago, and gives his reasons for abandoning the method of mixed anesthetics. The patient, under the influence of morphin, seems more as if he had been rendered unconscious by a blow from a club rather than merely put to sleep. The vital processes are at such a low ebb, Tuffier remarks, that he always fears that the organism might be unable to rally in case of any untoward occurrence. No mishap ever occurred in his experience, but this impression has been one of his

reasons for discarding the method. The patients in 2 of his cases did not wake for an hour or so after the operation. This prolongs the surgeon's anxiety unnecessarily.

Revue de Chirurgie, Paris.

Last indexed page 1814.

35 (XXV, No. 5.) *De la tuberculose et des sténoses tuberculeuses du pylore. Ricard and Chevrier.
36 *Des kystes hydatiques de l'abdomen. Mabit (Buenos Ayres).
37 *Contribution à l'étude des impotences fonctionelles consécutives aux traumatismes articulaires. Mally and L. Richon. (Continued from preceding volume through Nos. 3 and 4, and concluded.)
38 La chirurgie du cœur (of heart). P. Guibal. (Continued.)
39 *La tuberculose du coccyx. H. Caubet. (First part in preceding volume.)

35. **Tuberculosis of the Pylorus.**—Ricard and Chevrier have been able to find in the literature 107 cases of tuberculosis of the stomach, but only 16 of tuberculous stenosis of the pylorus. The duodenum was involved in 8.42 per cent. of the gastric cases and in 25 per cent. of the pyloric. The microscopic and macroscopic characteristics of the tuberculous lesion may become entirely obliterated under the action of the gastric juice. In such cases, the nature of the process may be determined from involvement of the surrounding tissues. Tuberculous stenosis of the pylorus is primary in about half the cases, and in other respects it differs from tuberculosis of the rest of the stomach. The ulcerations at the pylorus are due to the direct action of the tubercle bacillus. Elsewhere in the stomach the ulcerations are a result of a gastric "tuberculinosis," the effects of the tuberculous toxin. Such lesions may develop also at the pylorus, but this is the chosen site for the true tuberculous ulcerations. The article is continued. It is based on 4 cases personally observed.

36. **Hydatid Abdominal Cysts.**—Mabit has had occasion to operate in 18 cases of hydatid cysts. Eight were in the right lobe of the liver, 3 in the left, 2 in the spleen, 3 in the omentum and 2 in the mesentery. He operates by uncovering the cyst, walling it off with compresses, and then puncturing. When most of the fluid has escaped, he draws the cyst out and opens it. The mother cyst is removed and the lips of the incision are then everted and the interior is rinsed with a strong jet of a weak solution of boric acid. This flushes out the cavity and washes away all débris and daughter cysts. He then sponges the cavity dry and examines it for fistulas and bleeding points. It is then detached as completely as possible from adhesions and everything floating—that is, not attached anywhere—is removed and the abdomen sutured in three tiers. The results have been perfectly satisfactory in all the patients treated by the above technic. The 18 cases are described in detail. The affection is so common in Argentina that it is recognized early; none of the cysts were very large.

37. **Functionally Impotent Joints After Traumatism.**—Mally and Richon call attention to the reflex amyotrophia from changes in the spinal trophic centers liable to follow a traumatic articular affection. They conclude that in all cases of functional impotence following an accident to a joint the concomitant spinal-cord affection must not be overlooked. Besides the familiar symptoms of reflex atrophy, the electric resistance will be found below that of the sound side. The spinal cord exhibits lesions corresponding to the joint affection. In the first or dynamic stage of the lesions in the spinal cord there are no changes in the cells discoverable by our technic, and this phase is curable. After the motor centers become appreciably affected the muscular fiber succumbs to degenerative atrophy, and the process is then incurable. This conception of reflex amyotrophia originating in a joint is important for general surgical pathology. It explains the pathogenesis of a large number of joint affections, such as the passive displacement of the humerus, painful valgus flat foot, painful acquired hip-joint deformities, the genu valgum and scoliosis of adolescents, etc. The extensive experimental research reported established that there is no necessary relation between the intensity of the articular affection and the gravity of the reflex amyotrophia induced by it. There is, however, a certain connection between the duration of the joint process and the gravity of the reflex amyotrophia. The more prolonged the irritation in the joint the more pronounced the lesions in the spinal cord and the greater the probabilities of their being incurable. Reflex amyotrophia is generally severer in the legs than in the arms, as the mechanical irritation from walking, during convalescence, is more intense than from any exercising of the arms. If the joint affection recurs after apparent recovery, the amyotrophia engendered by the joint affection generally leaves some indelible traces, easily detected by electric exploration. The prognosis is more serious the greater the difference between the response to electric tests on the affected and on the sound side. The writers conclude their extensive article with suggestions as to treatment, commending faradization or static electricity for the mild form of reflex amyotrophia. When there are considerable spasmodic phenomena, local faradization is dangerous. Static electricity should be substituted and all forcible measures avoided. Full particulars of 36 cases with results of treatment are tabulated.

39. **Tuberculosis of the Coccyx.**—Caubet reviews the details of 27 cases published in the literature or personally observed. The only rational treatment, he remarks, is radical extermination of the entire process involving the bone. This treatment is logical, as the tuberculous affection in the coccyx is generally primary and the lesions do not display any tendency to invade the neighboring organs. Any intervention less radical than entire suppression of the focus is a mere waste of time. The various points for superior technic in resection of the coccyx are analyzed and summarized.

Archiv f. Gynaekologie, Berlin.

Last indexed page 1618.

40 (LXXV, No. 2.) Ueber Decidua-Cellen in der Cervix uteri bei intracorporaler Gravidität. M. Blumberg.
41 *Digestive Disturbances in Early Infancy.—Zur Kenntnis der Verdauungs-Störungen im ersten Lebensalter. F. Kermauner.
42 Formation of Perineal Flap.—Die Lappendammbildung bei completer Ruptur, bes. die Lawson Tait'sche Methode. W. Nagel.
43 Instrumental Dilatation Should Not be Recommended to the General Practitioner.—Darf die Bossi'sche Methode dem prakt. Arzt empfohlen werden? A. Dührssen (Berlin).
44 *Evacuation of Glands in Operating on Uterine Cancer.—Der Werth der Drüsenausräumung bei der Operation des Uterus-Carcinoms. K. Baisch (Tübingen).
45 *Vaginal Cancers.—3 Fällen von Scheidenkrebs. K. Schmidlechner (Budapest).
46 Partus bei Uterus duplex separatus und Vagina septa. E. Pollak (Vienna).
47 *Internal Secretion of Ovary and Placenta and Their Importance for the Functions of the Mammary Gland.—Die innere Secretion von Ovarium und Placenta und ihre Bedeutung für die Function der Milchdrüse. J. Halban.

41. **Digestive Disturbances in Early Infancy.**—Kermauner states, from his own experience and that of others, that more than 26 per cent. of the infants who succumb to gastrointestinal disturbances are less than a month old. The infection must have taken place during the first days of life. If infection during the first week can be prevented, the child then acquires strength and produces antibodies which, to a certain extent, protect it against infection later. It is not the lack of proper food so much as the lack of proper care otherwise that is responsible for this high morbidity during the first week. Almost all the infants in his charge at the Heidelberg maternity showed the staphylococcus albus in their stools. This infection remained latent or induced dyspepsia accordingly as the infants were kept clean and warm or were allowed to become chilled. The attendants are required to wash their hands each time after changing the diaper of an infant. Heubner even goes so far as to have different attendants take care of the upper and of the lower parts of the body of the infant. The cotton used in powdering is thrown away and a fresh piece taken for each child. The infants suck through a nipple guard to prevent infection from this source, and the mothers are taught to keep the nipple clean and not to touch the rubber guard. The low temperature of the newly born is combated by wrapping in warm woolen blankets and by giving the first bath at a temperature of 40 C. (104 F.), leaving the child in the water for fifteen minutes, and keeping it warm afterward with hot water bottles in the crib. To avoid exposing the infant, the umbilical cord is not inspected until the fourth day after it is dressed.

Cleanliness and warmth are the principal aids in tiding the infant past its defenseless stage and in preventing the latent microbism from developing gastrointestinal disturbances.

44. **The Glands in Uterine Cancer.**—Baisch remarks that the findings in operations as well as in the cadaver show that the glands are affected by metastases along the physiologic anatomic routes, following a regularly progressive course. The metastasis does not skip about arbitrarily. The glands are found affected in about a third of the cases of operable cancer of the cervix. He reviews the results of 125 operations for uterine cancer with the autopsy findings in 18 patients who succumbed soon after the operation, comparing them with those published by others. They demonstrate the necessity for seeking and removing affected glands, and also that this can scarcely be done by way of the vagina.

45. **Vaginal Cancer.**—Three cases of vaginal cancer in pregnant women are reported and 13 from the literature are summarized. The patients in the first group were from 20 to 33 years old, and when the age is mentioned in the cases on record it was never over 41. Vaginal cancer is particularly malignant and grows exceptionally rapidly during a pregnancy. Five of the patients died from septic infection during the puerperium, and the others died in less than a year from recurrence after removal of the neoplasm. Living children were born in 10 cases. In treatment, perineal total extirpation of vagina and uterus offers the best chances for success, but if the case does not seem operable palliative measures should aim to relieve and to deliver the child at term. Various contingencies are described with the special technic for each.

47. **The Mammary Gland and the Internal Secretion of Ovary and Placenta.**—Halban points out that the development of the breast coincides with that of the ovaries. At first there is an "embryonal impulse" imparted by substances from the maternal organism. Then comes the "puberty impulse," connected with the development of the ovaries, then follows the "menstruation impulse," the breasts enlarging at each menstrual period. During pregnancy and nursing the ovaries remain quiescent. The "pregnancy reaction" on the part of the mammæ is not due to influences from the fetus, as it persists after the death of the latter. He attributes it to the influence of the placenta, the trophoblast and the chorionic epithelium, assuming that both placenta and ovaries have an internal secretion analogous in their effects, but that the former is stronger in its action. Both make the mammæ increase in size, and as soon as their influence is removed the enlarged gland settles down to increased secreting functions. During pregnancy the placenta assumes the task previously accomplished to a limited extent by the ovary. Experiences with hysterectomized patients and others have shown that the milk secretion can not be due to the action of the uterus nor to nervous impulses, as it continues after hysterectomy and after the nerves leading to the mamma have been severed. Puerperal involution of the uterus is a true atrophy following the loss of the placenta. The milk secretion enters on the program when the action of the placenta has ceased or nearly so. The milk secretion is disturbed again when the woman enters on a new pregnancy and also by menstruation. The ovary and the placenta alike induce hyperplasia of the mammæ and inhibit the secretory function. Castration removes this inhibition and is advantageously applied to milch cows in dairies. Osteomalacia is an infection which frequently develops during pregnancy and may subside afterward, or if it persists it may be cured by removal of the ovaries. Halban cites a number of facts from comparative anatomy and physiology to sustain this assumption in regard to the etiology of the secretion of milk. He has been elaborating this theory for several years and has become more and more convinced in the course of his research of the close relationship between the ovary and the placenta and that both are directly concerned in the physiology of the mammary gland, and especially in the secretion of milk.

Centralblatt f. Chirurgie, Leipsic.

48 (XXXII, No. 17.) *Treatment of Prolapsed, Gangrenous Hemorrhoidal Nodules.—Zur Behandlung vorgefallener brandiger Hamorrhoidalknoten. R. v. Baracz.

49 Eine neue Nadel (needle). P. Loopuyt (Rotterdam).

50 Success of Bier's "Congestion Hyperemia" in an Acute Suppurative Process.—Ueber eine Beobachtung im Gefolge der Bier'schen Stauungshyperämie bei akut eitrigen Prozessen. Leser (Halle).

Centralblatt f. Gynäkologie, Leipsic.

51 (XXIX, No. 17.) Mechanical Reasons for Rotation During Delivery.—Zur mechanischen Begründung des Rotationsvorganges der Geburt. H. Ostermann.

48. **Treatment of Prolapsed Gangrenous Hemorrhoidal Nodules.**—Twenty years' experience has only confirmed von Baracz in the advantages of prompt amputation of the gangrenous portion into sound tissue and thermocauterization of the stump. He has never had any hemorrhage, stricture or recurrence with this technic.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

52 (XXXI, No. 18, May 4.) *Protecting Antityphoid Vaccination.—Zur Schutzimpfung gegen Typhus. R. Bassenge and M. Mayer.

53 *Treatment of Cardiac Insufficiency.—Behandlung der Herzinsuffizienz. A. Hoffmann (Düsseldorf). Postgraduate lecture.

54 Zusammenwirken normaler und immunisatorisch erzeugter Ambozeptoren bei der Hämolyse. H. Sachs.

55 *Epidemic Cerebrospinal Meningitis.—Genickstarre in Ober-Schlesien. Radmann.

56 *Traumatic Affections in Telephone Tenders.—Ueber funktionelle nervöse Störungen bei Telephonistinnen nach elektrischen Unfällen. G. W. Wallbaum (Berlin).

57 *Ueber Spirochaeten-Befunde im Lymph-Drüsen-Saft Syphilitischer. F. Schaudinn and E. Hoffmann.

58 Behandlung der Furunculose und Folliculitis mit Hefe-Präparaten (yeast). A. v. Kirchbauer.

59 Schiller als Arzt (as physician). H. Magnus. See page 1627.

52. **Vaccination Against Typhoid.**—Mayer discovered some time ago that it was possible to derive a vaccine from bacilli by shaking them up for a certain length of time in distilled water. The filtrate is free from the bacteria themselves, but it contains a potent vaccine. With Bassenge he has been applying this method to the production of a vaccine against typhoid fever. A single subcutaneous injection of 2 c.c., which contains the effective substances of an entire culture, induces such a production of antibodies that the blood displays marked bacteriolytic properties even six months afterward. The vaccine is a yellowish limpid fluid, durable and dosable, while the reaction to the injection is very slight.

53. **Treatment of Cardiac Insufficiency.**—Hoffmann expatiates on the importance of the functional diagnosis, and whether the insufficiency is relative or absolute. Much depends on the effort demanded of the heart by the mode of life, etc. He regards baths as worth more for prophylaxis than in treatment of heart disease. His experience with the sinusoidal current and even with carbonated baths has not answered his expectations. The remote results of balneologic treatment should be published by physicians more than hitherto. He regards the combination of baths and Zander exercises as absolutely dangerous. When signs of absolute insufficiency appear, rest in bed is necessary, with an ice bag to the heart region, suspended from a hoop spanning the bed, so that its weight does not rest on the heart. The ice bag is not indicated in cases without acceleration of the heart action. If digitalis fails, calomel may prove useful, given in large doses for several days. The diet should be light, preferably fluid, but "thirst cures" do no good. The main point in treating cardiac insufficiency is in the diagnosis and treatment of the underlying affection.

55. **Epidemic Cerebrospinal Meningitis.**—Radmann's article was summarized in the news columns on page 1627. He suggests that the disease may be transmitted by vermin, as he noticed that flea bites were numerous on the stricken children.

56. **Functional Traumatic Nervous Affections in Telephone Attendants.**—Wallbaum analyzes the severe functional disturbances resulting from an electric shock received while tending the telephone. If the person calling up "central" rings again while the wire is being connected, before the operator has had time to get out of the circuit, the result is a slight electric charge received by the operator. It scarcely ever amounts to more than 10 volts, and usually is hardly noticed by the operator, although the receiver is bound to her head. Occasionally the shock is very severe, and serious functional dis-

turbances are liable to result. Five typical cases are reported in detail to illustrate the points learned in the course of his extensive experience. First and foremost is the warning that those predisposed by heredity or for other reasons to nervous and vascular affections should be excluded from service as telephone operators. The syndrome resulting from the shock generally commences with fainting, clonic convulsions, swelling of the extremities, especially on the affected side, and disturbances in sensibility. This is followed in time by headache and vertigo, with neuralgia-like pains here and there, especially during cold and stormy weather, with tonic and clonic muscular spasms, colic pains in the abdomen and various paralyses. He attributes to paralysis of the vascular innervation the edematous swellings and extravasation. The mental functions also suffer, the power of concentration becoming more or less impaired. Irregularity in the heart action was a feature of all his cases, as was also a suspicion of hysteria. A person thus affected should not resume the service for a long time even after apparent recovery. Suggestion proved the best means of curing the paralyses and static electricity for the neuralgic pains. Faradization is contraindicated, as too irritating. Ordinary drugs proved ineffectual against the headaches; cold compresses and static electricity were more successful. From ten to fifteen minutes in a bath before retiring proved the best means to combat the insomnia. Carbonated baths were useful in restoring the general metabolism to normal.

57. **New Spirochaete in Syphilis.**—The finding of the *Spirochaeta pallida* in 8 cases of syphilitic lesions is mentioned above, abstract 23. Schaudinn is a member of the Imperial Council of Health, and Hoffmann is a retired army medical officer and privat docent, both trained and accurate observers, especially in the study of protozoa and spirochaetes. The *Spirochaeta pallida*, as they have named the new micro-organisms, was found in smears of extirpated inguinal glands from 2 cases and in the gland juice obtained by puncture in the 6 other cases. The syphilis was from one to four months old. The new spirochaete is almost transparent and extremely motile, tapering to a point at each end. They found two varieties of spirochaetes, the larger one taking the stains readily and found only in the superficial lesions, while the pale, delicate, more thread-like and much smaller *Spirochaete pallida* could be found not only on the surface, but in the depths of the primary and secondary syphilitic glandular lesions. (The illustrated description of the new spirochaete appears in the last number of the *Arbeiten a. d. kaiserl, Gesundheitsamt*, xx, page 527. The only technic that showed up the *Spirochaete pallida* was the following: The smears from fresh syprilitic lesions are made as thin as possible on the cover-glasses, and are fixed in absolute alcohol for about ten minutes after being thoroughly dried. The cover-glasses are then left for sixteen to twenty-four hours in a freshly made mixture of 12 parts Giemsa's eosin solution (2.5 c.c. of a 1 per cent. solution of eosin to 500 c.c. water); 3 parts azure I (solution 1 to 1,000 water), and 3 parts azure II (solution 0.8 to 1,000 water). After briefly rinsing in water the cover-glasses are dried and mounted in oil of cedarwood. This technic shows up the pale spirochaete well. In one of the illustrations seven of the corkscrew spirals are seen in the field, magnified only 1,200 times.)

Münchener med. Wochenschrift, Munich.

60 (LII, No. 16.) Entwicklungsstörungen, Fötalismus und Infantilismus (disturbances in development). A. Hegar.
61 *Suction Applied in Treatment of Inflammations.—Ueber die Behandlung entzündlicher Erkrankungen mittelst Saugapparaten. R. Klapp.
62 Zur Differentialdiagnose zwischen Hernia diaphragmatica und Eventratio diaphragmatica. H. Hildebrand and O. Hess.
63 *Combined Salve and Phototherapy.—Erfahrungen bei Behandlung mit elektrischem Licht unter besonderer Berücksichtigung einer neuen Lichtsalbenbehandlung bei Hautkrankheiten. L. Steiner.
64 Modified Finsen Lamp.—Ueber Verbesserungen der Finsen-Reynlampe nebst Bemerkungen über Lupusbehandlung. Fr. Bering.
65 Ophthalmology of the General Practitioner.—Die Augenheilkunde des praktischen Arztes. Salzer.
66 Zur Diagnose des Trachoms. Junius.
67 *Hysteric Traumatic Affections in Telephone Attendants.—Hysterische Unfallerkrankungen bei Telephonistinnen. H. Bohmig.
68 Bauchpresse und Torsion des Samenstrangs (straining and torsion of spermatic cord). H. Landau.
69 *Verwendung des Santonins gegen Lungentuberkulose. C. Tollens.

61. **Treatment of Inflammatory Affections with Suction Apparatus.**—Bier's success in treating infectious processes on the limbs with his technic of stasis hyperemia was chronicled in these columns recently. In Klapp's communication from the same clinic, the experiences with suction apparatus to apply the same principle to inflammatory processes on the trunk are described and illustrated. On the extremities, the desired result is obtained by applying a tourniquet to the limb. On the trunk it is necessary to use aspirating or suction apparatus. In mammitis, a broad-rimmed glass fits over the breast around its base, and a vacuum is created with an air pump connecting with a cannula through the rubber stopper in the top of the cup or jar. When there is distinct fluctuation in the abscess it is opened with small incisions after local anesthetization with an ethyl chlorid spray, and the glass bell is applied at once. The immediate relief of the pain in all cases of mammitis is one of the greatest advantages of this method of treatment. It aborts early cases and prompt recovery is the rule. Three weeks was the average duration of the 15 cases thus treated, including 13 of puerperal infectious mastitis. At the end of this time the breast had resumed entirely its normal aspect and consistency, without leaving any disfiguring traces. Even infiltrated tissue seems to retain its vitality better under this treatment than by other technics. The milk should be drawn completely with an ordinary breast pump beforehand. It sometimes happened that the application of the suction apparatus promoted the flow of milk, so that where there had been none before the use of the breast pump afterward brought from 50 to 60 c.c. The same principle has been applied to treatment of furuncles, panaritium, abscesses, infected insect bites, etc. One of the apparatus used consists of a broad-rimmed glass tumbler with a large rubber bulb set in the inverted bottom of the tumbler. For the finger he has a cylindrical glass cup with a rubber cuff that fits air-tight around the base of the finger. The vacuum is made with an air pump connected with a spout branching from the cylinder. The results in 100 cases thus treated have been excellent and corroborate all the claims made for this method of treating inflammatory processes. In 4 cases of carbuncle the apparatus was applied for forty-five minutes daily and the pus aspirated through the spontaneous openings. By the third day the carbuncle was soft throughout, the tension relieved and all pain gone. When there is a distinct fluctuation small incisions, not longer than from .5 to 1 cm., are made, or the tip of the pustule is picked off and the aspirator applied at once. The suction should never be violent, usually merely enough to hold the apparatus on the skin. The outcome seems to depend on the care with which the first applications are made. In mastitis, the hyperemia induced should be as intense as the patient can bear without pain, or until the skin over the mamma becomes very red with a slightly bluish tint. He has found it best to remove the stopper of the jar after five or six minutes and to allow the circulation to be restored through the parts for a few minutes before applying the pump again. The patient holds the glass bell against the breast and can regulate the amount of suction to suit herself.

63. **Electric Light Plus Salve Treatment of Cutaneous Affections.**—Steiner describes numerous experiences from Hoffmann's clinic at Leipsic which have established the superior efficacy of a combination of reflected electric light and salve treatment. The results are far better than with either alone. This form of phototherapy seems to act more by the heat generated than by the light rays. The active hyperemia induced is probably the main factor in the results, supplemented by the bactericidal action of the rays. When used with a sulphur or mercurial ointment, eczema, parasitic affections and acne rosacea, etc., were more promptly and favorably influenced than by any other method of treatment in his experience. He gives the details of about three dozen cases.

67. **Traumatic Hysteric Affections in Telephone Girls.**—Böhmig reports 9 cases of neuroses following an electric shock

received while tending the telephone. He examined the young women in from three to twenty-four hours after the traumatism, and has had them under observation for several years. Organic changes were not found in any instance. One case is distinguished by attacks of vertigo on the crossed side, probably due to vasomotor disturbances in the labyrinth. In others, the symptoms involved both sides, and in others only the injured side. The complete picture of the severe neurosis was observed at once after the accident, which speaks against simulation or suggestion as a possible factor.

69. **Santonin as a Remedy for Tuberculosis.**—Tollens learned that santonin is currently used in parts of the orient as a remedy for tuberculosis. His tests on rabbits, based on this fact, showed that santonin has the power to reduce temperature, to induce leucocytosis and to promote respiration by increasing the depth and reducing the frequency of the respirations.

Virchow's Archiv, Berlin.

Last indexed page 1889.

70 (CLXXVIII, No. 2.) Ueber die ersten anatomischen Veränderungen bei Lungen-Phthise (first anatomic changes in phthisis). A. J. Abrikossoff (Moscow).
71 Primäre congenitale Herz-Hypertrophie (of heart). E. Hedinger.
72 Anatomische Untersuchungen über die Aetiologie der Prostata-Hypertrophie. P. Wichmann.
73 Ueber Angiome und sarkomatöse Angiome der Milz (of spleen). Theile.
74 Ueber Psammome der Haut und des Unterhautgewebes (of skin and subcutaneous tissue). M. Winkler.
75 (No. 3.) Die Traktions-Divertikel des Oesophagus. H. Ribbert.
76 Ueber die Arteriosklerose der kleinen Organ-Arterien und ihre Beziehung zur Nephritis. L. Jores.
77 Veränderungen der Aorta bei Syphilis. S. Abramow.
78 Zur Histologie der Arteriosklerose der Pulmonal-Arterie. H. W. E. Ehlers.
79 Fall von Angioma racemosum der Arteria alveolaris inferior. F. Schlagenhaufer.
80 Fall von Chorionepithelioma der Harnblase (of bladder). W. Djewitzki.
81 Fate of Purin Bodies Introduced into the Circulation.—Schicksal der in die Blutbahn gebrachten Purinkörper. W. Ebstein and E. Bendix.
82 Behavior of Leucocytes in Vital Blood Staining.—Verhalten der Leukocyten bei der vitalen Blutfärbung. Rosin and E. Bibergeil.
83 Origin of Blood Plates. H. Hirschfeld. Reply to Presich's Article in No. 1.

Wiener klinische Rundschau, Vienna.

Last indexed page 1990.

84 (XIX, No. 13, April 2.) *Kasuistisches zur Frage der sogenannten essentiellen Nierenblutung (hematuria). H. Schüller.
85 Action of Hemolysins.—Ueber die Wirkung der Hämolysine. K. Landsteiner and M. v. Eisler.
86 *Hematoma of Nasal Septum.—Die Hämatome der Nasenscheidewand, deren Umwandlungen und deren einfache Behandlungsart. E. Baumgarten.
87 (No. 14.) Einige Bemerkungen zu C. Spenglers "neuem Heilverfahren" (treatment with bovine tuberculin). H. Frey.
88 (No. 16.) Compressing Diaphragm.—Die Faszikelrohrblende. Eine verbesserte Kompressionsblende. I. Robinsohn.
89 Contrivance to Hold Roentgen Wires Taut.—Eine Röhrenkabelspannvorrichtung. R. Kienböck.
90 Radioscopy of Heart with Weak Electric Current.—Technik der Herstellung fast orthodiagraphischer Herzphotogramme vermittels Röntgeninstrumentarien mit kleiner Elektrizitätsquelle. A. Kohler (Wiesbaden).

84. **Essential Hematuria.**—Schüller reports a number of cases to show the errors liable to be made on the assumption of essential hematuria. In one case, unilateral hematuria was for a long time the only symptom of a chronic, severe parenchymatous nephritis revealed later by operation. Two cases demonstrate the unreliability of unilateral hematuria as a sign of unilateral lesions. In one patient, the hematuria occurred at one time exclusively on one side and then exclusively on the other. In five pregnancies, it appeared always at the twenty-second week, but persisted chronically after a sixth. In another case, the unilateral hematuria was the first and for more than a year the only symptom of advanced bilateral nephritis. Albumin and tube casts did not appear until after two years of hematuria. He regards it as a sign of nephritis in every case, involving either one or both kidneys, even when the hematuria is exclusively unilateral.

86. **Hematoma of Nasal Septum.**—A hematoma developing in the nasal septum after an accident to the nose is generally absorbed and causes no disturbance, but in some cases it may persist and cause chronic perichondritis or obstruction of the nasal passages. In 40 cases in which he has found a hematoma in the septum as the cause of the nose affection, there had been suppuration in only 5. He treats the hematoma by compression with a wick of carbolized cotton as soon as the swelling and pain from the accident to the nose have subsided under applications of ice the first day. The wick is changed every day, a larger one being inserted each time, until all trace of the hematoma has vanished. By tamponing each side of the septum any dislocation or fracture of the cartilage can be corrected.

Wiener klinische Wochenschrift, Vienna.

Last indexed page 995.

91 (XVIII, No. 6.) *Zur operative Behandlung des Kryptorchismus. A Hermann.
92 *Ueber 2 seltenere Ursachen der Duodenalstenose (unusual causes). K. Reitter.
93 (No. 7.) Route of Infection in Alimentary Tuberculosis.—Die Infektions-Wege bei der Fütterungstuberkulose. J. Bartel.
94 Entoptic Perception of Own Circulation.—Ueber entoptische Wahrnehmung des eigenen Blutkreislaufes und ihre Bedeutung in der Lehre von den Gesichtalluzinationen. A. Pick.
95 (No. 8.) Ueber induciertes Irresein (psychic infection). E. Raimann.
96 *Zur Röntgenbehandlung der Leukämie. A. Herz.
97 Ein Plessimeter zur Unterscheidung feinerer Schalldifferenzen (improved plessimeter). K. Feller.
98 (No. 9.) Der akute Tod von Meerschweinchen an Tuberkulose (acute death of guinea pigs). O. Ball.
99 Der Gang der natürlichen Tuberkulose-Infektion beim jungen Meerschweinchen (course in young guinea-pigs). J. Bartel and F. Spieler.
100 Action of Light on Mixture of Eosin and Blood.—Wirkung des Lichtes auf Eosin-Blutgemische. H. Pfeiffer.
101 *Zur Aetiologie der Pinguecula und des Pterygiums. A. Sachsalber. (Commenced in No. 8.)
102 (No. 10.) *Zur Frage der Latenz der Tuberkulose. A. Weichselbaum and J. Bartel.
103 Die psychiatrischen und neurologischen Indikationen zur vorzeitigen Unterbrechung der Schwangerschaft (for premature interruption of pregnancy). J. W. v. Jauregg.
104 *Justification of Artificial Abortion.—Ueber die Berechtigung zur Einleitung der künstlichen Frühgeburt. A. Haberda.
105 *Medical Indications and Forensic Latitude for Artificial Interruption of Pregnancy in Case of a Neurosis or Psychosis.—Inwiefern ist beim Vorlegen einer Neurose oder Psychose künstliche Unterbrechung der Schwangerschaft medizinisch indiziert und juristisch gestattet? H. Gros.
106 (No. 11.) Ueber spezifische Antikörperbildung nach Eiweissfütterung (formation of antibodies after feeding on albumin). H. L. Celler and F. Hamburger.
107 Perineotomia mediana. C. Fleischmann.
108 Experiences with Carlsbad Waters, etc., in Cholelithiasis.—Ueber die mit der balneologischen und der operativen Behandlung des Gallensteinleidens gemachten Erfahrungen. F. Fink.
109 Die Bestimmung des spezifischen Gewichtes von Exsudaten und Transsudaten bei Körpertemperatur (specific gravity at body temperature). M. Engländer.
110 *Zur Frage des Coma diabeticum nach operativen Eingriffen. E. Ruff. (Commenced in No. 10.)
111 (No. 12.) Use of Caustics in Uterus.—Ueber den Gebrauch von Aetzmitteln. R. Chrobak.
112 Fatal Pemphigus Involving Stomach Mucosa After Taking 10 gm. of Sodium Iodid.—Fall von Jodpemphigus mit Beteiligung der Magenschleimhaut. R. Polland.
113 Nutrition and Nutritional Disturbances of Lens.—Ueber unsere heutigen Kenntnisse der Ernährung und Ernährungsstörungen der Linse. E. Zirm.
114 Variola und Varicellen. R. Pick.
115 (No. 13.) Ueber die periodisch auftretende (paroxysmale) Lähmung (paralysis). H. Schlesinger. Id. M. Infeld.
116 Action of Eosin on Blood Corpuscles and Serum.—Ueber die Wirkung fluoreszierender Stoffe (Eosin) auf normales Serum und rote Blutkörperchen. H. Pfeiffer.
117 Dermatosis epithelialis (degenerativa) circumscripta eczemiformis.—Paget's disease. E. Lang.
118 Paraffin Injections to Remove Smallpox Pits.—Die kosmetische Behandlung der Blätternarben mit Vaselin und Oelvaselin. E. Stegmann.

91. **Operative Treatment of Retention of Testicle.**—Gersuny has treated 4 patients with bilateral undescended testicles by drawing the testicle down with a silk thread tied around the relics of the gubernaculum at the lower pole of the testicle. This thread is then brought down into the scrotum and passed through the septum at its lowest point and tied around the other testicle. This holds each in place without inconvenience, while the firm bridge between prevents their slipping back. Examination three years after the operation showed the testicles still at the lowest point in the scrotum, while the band formed of the two united gubernacula was distinctly palpable.

92. **Causes of Duodenal Stenosis.**—In one of the cases described, the pancreas became self-digested. The subacute development of the process enabled a sac of connective tissue to form around the necrotic mass, thus encapsulating it. Effusion of fluid into this sac increased its size and compressed adjacent organs. The stenosis in the other case had been

caused by an impacted gallstone in the first loop of the jejunum which had been palpated at first, but later became inaccessible to palpation.

96. **Roentgen Treatment of Leukemia.**—In the case described by Herz, the patient was a man of 56, a gardener, with lymphatic leukemia. The proportions of leucocytes remained about the same under Roentgen treatment, but the total number gradually rose and then rapidly sank again. The action of an intercurrent pneumonia on the leukemia is compared with that of the Roentgen treatment. Both were followed by reduction in the size of the enlarged organs, but the pneumonia also reduced the number of pathologic forms of the leucocytes. Neither an intercurrent infection nor Roentgen treatment seem to offer much prospect of a permanent cure. His patient died of the pneumonia. The autopsy findings are described in detail.

101. **Cause of Pterygium and Pinguecula.**—Sachsalber ascribes pterygium to irritation from fine hairs on the inside of the lid. He has found such hairs in all his cases. He removes the hairs and instructs his patients how to pull out the lanugo hairs every week with the aid of a strong magnifying glass. All the previous disturbances, chronic conjunctivitis, congestion, etc., were restored to normal, incipient pterygium retrogressed, and when long established its progress was arrested. He describes 6 typical cases from a large experience and thinks that pulling out these hairs will remove the cause in many cases of pterygium.

102. **Latency of Tuberculosis.**—Weichselbaum and Bartel tested the glands from a number of children who had succumbed to various affections without any apparent tuberculous process or complication. Animals were inoculated with glandular substance, and tuberculous processes developed in consequence from the material from 8 of the cadavers. There must have been living bacilli in the glands tested, and they must have been capable of inducing infection, although no infection had resulted in the patients. General tuberculosis developed in from forty-five days to five months in some of the animals, indicating a certain virulence on the part of the germs.

104-105. **Artificial Abortion.**—Haberde thinks that in every case in which artificial abortion has to be done by the physician to save the mother's life—and this is the only justification, in his eyes—the state should require declaration of the circumstance. The physician should demand a consultation. Gross emphasizes the point that the woman has the right to decide whether any operation and what one should be done on her. In case of a neurosis or mental disease, if she is not able to decide for herself, the physician should be the one to decide for her—not any third person. Consultation with a neurologist or alienist is advisable in these cases, if possible, for the protection of the physician.

110. **Postoperative Diabetic Coma.**—Ruff's article issues from A. Froenkel's clinic at Vienna. It reviews the entire subject of coma following an operation on a diabetic, and shows that this contingency has occurred after the use of all kinds of anesthetics in a series of cases embracing 236 operations on diabetics. Coma developed in 25 patients, with a mortality of 10.6 per cent. A few cases are on record in which the manifestations of the diabetes vanished after the operation. When 2 gm. of ammonia are excreted during the day, the development of coma may be feared, and it is almost certain to occur when the amount reaches 4 gm. Otherwise there does not seem to be any criterion from which to deduce the probability of coma from the quality of the excretions or the severity of the diabetes. Two cases of coma have been reported in which merely local anesthesia had been used, and yet death ensued. The loss of fluids during the operation can scarcely be considered, as cases have been reported in which there was no loss, as in a case described in which a woman of 35 was operated on for the relief of a periappendicular abscess under the Billroth anesthesia, and died in coma next day. Such mishaps may be averted by careful psychic preparation of the patient for the operation, with dietetic measures to reduce the glycosuria. General anesthesia, copious purgation and irrigations should be avoided. Food should not be withdrawn until the last minute, and should be commenced again as soon as possible, by the rectum if necessary. The operation should be postponed until these conditions are secured unless it is a vitally urgent one.

Archivio per le Scienze Mediche, Turin.

119 (XXIX, Nos. 1 and 2, 1905.) Istogenesi delle cisti semplici dell' ovaia (simple cysts of the ovary). D. Cesa-Domenichi.
120 Macroglossia congenita neurofibromatosa. E. Delfino.
121 Structure of Red Corpuscles.—Struttura dei globuli rossi. G. Pighini.
122 *Determination of Typhoid Bacilli in Stools.—Osservazioni e critiche sperimentali sul metodo di v. Drigalski-Conradi per le ricerche dei bacilli del tifo nelle feci. E. Monti.
123 Eziologia delle diarree estive dell' infanzia. G. Volpino.
124 Pathologic Anatomy of Hemo-angio-endothelioma of Liver.—Sui cosidetti tumori endoteliali. E. Ravenna.
125 Ipernefroma maligno del fegato. M. Donati.
126 *La morfologia del sangue nel periodo catameniale (blood in menstrual period). E. Ricca-Barberis.

122. **Determination of Typhoid Bacilli in Stools.**—The von Drigalsky-Conradi technic is recommended by Koch as the most reliable and practicable means of determining the presence of typhoid bacilli in the feces. The Genoa Institute of Hygiene has been testing this technic, and it has been found that absolute reliance can not be placed on it. Positive findings, supplemented by the agglutination test, are not enough to establish beyond question that the bacilli found are true typhoid bacilli. On the other hand, negative findings with the Drigalsky-Conradi test do not positively exclude the presence of the typhoid bacilli. This test is valuable to control others, but its findings can not be accepted as decisive alone. It is possible, however, that it may be perfected and that it may then prove the ideal method for the purpose. The experiments and findings are related in detail.

126. **Morphology of Blood in Catamenial Period.**—Ricca-Barberis states that the proportion of hemoglobin in the blood commences to diminish about the seventh day before the onset of the menses, rising again to normal or above and then diminishing again with the commencement of the menstrual flow, reaching the minimum at the close and returning to normal about the sixth day after cessation of the flow. The number of red corpuscles show no or very slight changes, not at all in proportion to the variation in the hemoglobin. The percentage of polynuclears is almost always reduced, while that of the small lymphocytes is increased. The proportion of eosinophile leucocytes increases or diminishes, never retaining the standard intermenstrual proportions. These morphologic changes in the blood occur unmistakably even in women who, on account of pregnancy or for other reasons, have no menstrual discharge. The catamenial period can be readily recognized by examination of the blood alone.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

OUTLINES OF INORGANIC CHEMISTRY. By F. A. Gooch and C. P. Walker. Cloth. Pp. 514. Price, $1.75 net. New York: The MacMillan Co., 1906.

EFFECTS OF TROPICAL LIGHT ON WHITE MEN. By Major C. E. Woodruff, A.M., M.D., Surgeon United States Army. Cloth. Pp. 358. Price, $2.50. New York: Rebman Company, 1905.

PSYCHOLOGICAL MEDICINE. A Manual on Mental Diseases for Practitioners and Students. By M. Craig, M.A., M.D. Cloth, Pp. 449. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co., 1905.

DR. JESSNER'S Dermatologische Vortrage für Praktiker Heft 8 Dermatologische Heilmittel (Pharmacopœa dermatologica) Zweite verbesserte Auflage. Von Dr. S. Jessner, Konigsberg i. Pr. Paper. Pp. 96. Price mk. 1,50. Wurzburg: A. Stubers Verlag (C. Kabitzsch), 1905.

A SYSTEM OF CLINICAL MEDICINE, Dealing with the Diagnosis, Prognosis and Treatment of Diseases, for Students and Practitioners. By T. D. Savill, M.D. Vol. II. Certain Disorders; Diseases of the Skin and Nervous System. Cloth. Pp. 1,147. Price $3,00 net. Philadelphia: P. Blakiston's Son & Co. 1905.

A SHORT PRACTICE OF MIDWIFERY FOR NURSES, Embodying the treatment adopted in the Rotunda Hospital, Dublin. By B. H. Jellett, B.A., M.D. Second Edition, Revised. With five colored plates and 133 illustrations in the text, also an appendix and a glossary of medical terms. Cloth. Pp. 407. Price, 6s. 6d. net. Philadelphia: P. Blakiston's Son & Co. 1905.